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AFTER BUSINESS HOURS

Here, There and Everywhere

(By William Beecham.)

The views expressed in articles published in this section are those of the contributors and not necessarily those of "The Australasian Manufacturer." They are selected for their interest value, whether controversial or not, and the comments of readers on the subject discussed are always welcomed by the Editor.

ON DINING OUT.

The food at home is cheaper far,
And often more delicious;
But when you leave the
restaurant
You also leave the dishes.

You can lead a boy to college,
but you cannot make him think.

A prominent sales executive says: "All the creative salesmanship in the world cannot build a phoney or a sub-standard product into a permanent business. For that reason the matter of quality is something of prime consideration with all organisations. It wasn't pure altruism which originally dictated this at-

tention to quality. After all, if someone was to be given six to twelve months in which to pay for a pot or blanket it would be little short of disastrous if the pot or blanket gave up the ghost before the last payment was made. Another consideration was that of possibly selling the customer something else when the first purchase was paid for; obviously it was much easier to sell to a well satisfied customer. It is still one of the fundamentals of sound business to be able to point with pride to the quality of the merchandise being offered, and right now this emphasis on quality is more pronounced than ever before."

THESE DAYS.

Mothers calling daughters early
So as to be Queens of May.
Merely get the answer surly:
"Shorter hours and better
pay."

Some medical men believe in
shock treatments—mailed out the
first of every month.

"Why do certain people insist upon buying an article merely because it is cheap, quite regardless of all other considerations?" asks a leading businessman. The main reason, it would seem, is that they do not know just how much better the better article is. One of the most simple arguments, of course, is that if A and B are articles called by the same name, and B costs less than A, then B must be the cheaper. But if B is inferior in quality it may actually be the dearer of the two. Manufacturers and retailers, therefore, would be wise to make a feature of telling the public why and how a particular line, dearer in price than competitive items, is actually the cheaper in the long run. This, naturally, seems elementary, but, unfortunately, it is by no means generally adopted. Too often the customer buys "in the dark" as it were, and has no idea of wearing, lasting or using features of the line being purchased. Little explanation is needed to convince any buyer that a line which lasts for

ten years is better buying than a line which cannot be guaranteed for even six months, but for all that, some explanation is necessary if the better article is to be sold.

THE MODERN MAID.

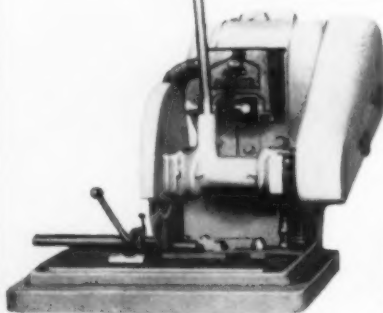
He hopes to woo her,
And if she lets him,
He'll pursue her
Until she gets him.

A driver is known by the mudguards he keeps.

To what sad state of affairs is modern journalism coming? Believe it or not, but the following lines are reprinted from an Australian weekly newspaper: "Bride wore white embossed cloak with low neckline pleated collar, around her neck Matron of Honour wore three strings of pearls around her neck Miss — and Mrs. — were chief bridesmaid and Matron of Honour respectfully the groom's mother wore a beautiful frock of burgundy ensemble the breakfast and reception was held in the local Town Hall after the reception Miss — wore a pose of assortment of green flowers The bride chose a frock of blue crepe and navy accessories for her going-away frock."

"In the common history of the world, as compiled by authors in

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general, almost all the great changes of nations are confounded with changes in their dynasties; and events are usually referred either to sovereigns, chiefs, heroes, or their armies, which do, in fact, originate entirely from different causes, either of an intellectual or moral nature. Governments depend far more than is generally supposed upon the opinion of the people and the spirit of the age and nation. It sometimes happens that a gigantic mind possesses supreme power and rises superior to the age in which he was born: such was Alfred in England and Peter in Russia. Such instances are, however, very rare, and in general it is neither amongst sovereigns nor the higher classes of society that the great improvers and benefactors of mankind are to be found."—Sir Humphry Davy.

A couple were talking on this and that when suddenly the young lady asked: "Tell me; did that Dionne fellow ever have any more quintuplets?" The man shook his head. "He did not," he exclaimed with conviction. "I knew it," said the young lady triumphantly. "I always said that he was only a flash in the pan."

They Said: about Pleasure—"Pleasure seekers never find theirs" (Elbert Hubbard) . . . "The greatest pleasure in life is doing what people say you can-

not do" (Walter Bagehot) . . . "The rule of my life is to make business a pleasure, and pleasure my business" (Aaron Burr) . . . "It is rarity that gives zest to pleasure" (Juvenal) . . . "The sweetest rose hath his prick" (John Lyly) . . . "I consider the world as made for me, not me for the world. It is my maxim therefore to enjoy it while I can, and let futurity shift for itself" (Smollett).

Do you, as a manufacturer, know your customers? Do you know, for instance, the problems which your customers have to face from their customers? Do you, indeed, know just who are the ultimate consumers of the merchandise which you produce and which you sell, perhaps, wholly and solely, to wholesalers? Bear in mind that the wholesaler will only buy your merchandise if he can sell it to the retailer. In turn the retailer will only buy it if he can sell it to the consumer. The consumer knows his retailer, but he probably knows next to nothing about you. It is not vital that he should, but it is vital that you should know him, and his desires, and his problems, and his financial status, and everything else which is his. He, and not the retailer or the wholesaler, is your customer. He is your livelihood, your source of profit.

Did you know? That the public debt of Australia, as at June 30,

1948, was £2,790,215,169 . . . That the total public debt per head of population, was £361/4/7 . . . That the annual interest liability, Commonwealth and States, was £82,324,768 . . . That the States owed London £328,189,845, and New York £24,848,433 . . . That Commonwealth administration costs in 1947-48 amounted to £25,590,247, compared with the £6,965,092 of 1944-45.

On Our Bookshelf

"Annual Survey of the British Textile Industry"

Britain can make it. Britain, fortunately, has also learned how to publicise it. Published as a supplement to "Fashions and Fabrics Overseas", by National Trade Press Ltd., "Annual Survey of the British Textile Industry" is a strikingly handsome example of modern British publicity, able to hold its own with any produced in the world to-day.

Directed to the attention of the world's textile and fashion buyers, "Survey" provides them with a thoroughly comprehensive and visual guide to sources of supply in Britain. It is a work of reference which will prove of great practical and lasting value to those who are seriously inter-

ested in doing business in the United Kingdom—now or in the future.

Business people are interested in the practical and commercial aspects of merchandise, and it is from this standpoint—rather than the romantic, historical, or scientific and technical angle—that "Survey" has been edited.

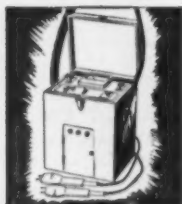
Such a work, say the publishers, has never before been attempted. It undoubtedly fills a long-felt want—a book to which one can constantly refer for the sources of British fashion merchandise. Sections of the book deal separately with Fabrics; Made-up garments; Hosiery, knitwear, underwear and corsets; and Knitting wools, smallwares and fashion accessories.

Another section, Production and Marketing Development, includes names and addresses of textile trade associations and export groups, and contains articles dealing generally with developments in production and marketing, new yarns, printing, dyeing, proofing, fine spinning, and the progress made in Britain towards an ideal fibre, written by experts in each field covered. These articles will provide buyers with new selling points and show how Britain's textile industry is working for new and better standards of textile merchandise.

The National Trade Press Limited is represented in Australia by W. H. Stuckey, 73 Walker Street, North Sydney, N.S.W.

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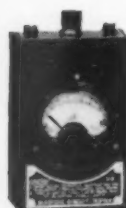
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Pitch	1.15625in.
Lead	4.625in.
Helix Angle	33° 22'
Addendum	.343in.
Depth	.692in.
Normal Thickness	.524in.
Outside Dia.	2.900in.
Pitch Dia.	2.213in.
Root Dia.	1.516in.
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Previous Production Time	4 hours
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Saving of 3½ hours.	



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M.V. Turbo-Alternators for Pyrmont "B"



Shown below is a 186-ton stator being loaded in England for shipment to Australia—part of a 55,500 kVA, .9 P.F., 33,000 volt M.V. Turbo-Alternator.

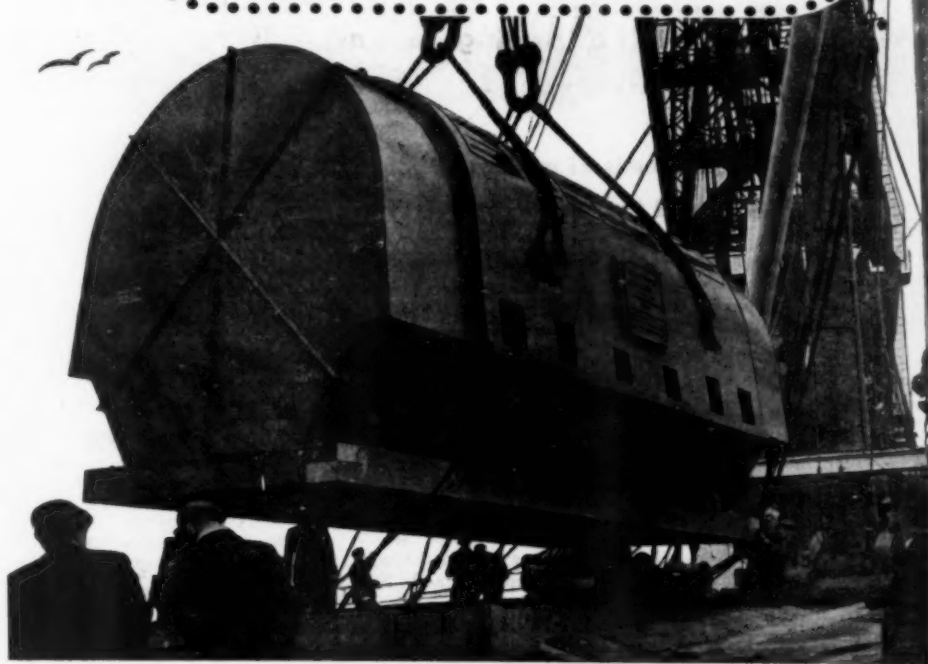
Australian General Electric Proprietary Limited is supplying four Turbo-Alternators for the new high pressure power station, Pyrmont "B", Sydney. The turbines incorporate three cylinders, arranged for a steam pressure of 1,200-lb. per sq. in. with a total temperature of 925° F. at the stop valve. Each set has a length of 87 feet.



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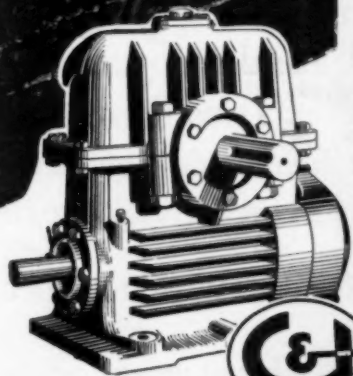
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gee, was it hot! - I just melted and ran out 

I began to cool down but suddenly I found
myself being crushed between two heavy rollers 
was I flattened! I came out black and flat 

I rested for a while - until one day I was placed on a slab
and whack - something hit me into a shape -  into
a bath which once again was hot, but I came out all
shiny  I was galvanised

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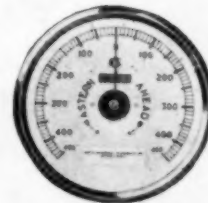
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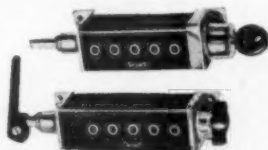
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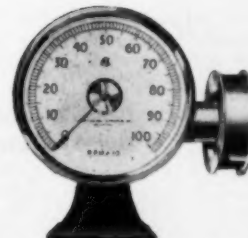
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Australia's National Manufacturers' Newspaper circulating in all States, New Zealand and Overseas. A weekly newspaper devoted to industrial efficiency and the manufacturing progress of Australia. Subscriptions within Australia and New Zealand (including Annual Number), £1/10/-; Great Britain and Possessions, £2; Foreign, £2/10/-. All subscriptions payable in advance.

PAGE FIFTEEN MAY 6, 1950.

How Are the Proceeds of Industry Divided? Scientific Probing of a Vital Problem

"There is an urgent need for comprehensive fact-finding on the subject of wages and prices, and the relative shares of the national product going to wage earners, salary earners, shareholders, and other sections of the community. The recurring phenomenon of quarterly wage adjustments, abruptly followed by soaring gas accounts and household bills, is leaving the public very bewildered, if not a little suspicious of unfair play. On the one hand, trade-union advocates insist that the living standards of the worker are falling and that his wages must be increased if he is to maintain a decent level of subsistence; and, on the other, producers warn that failing higher productivity they cannot absorb wage increases without risk of losses or without charging higher prices."—Extract from latest issue of "The I.P.A. Review", published by the Institute of Public Affairs, Victoria.

THE Institute, in its usual able fashion, then proceeds to survey the industrial field and to collect and publish a series of scientifically-classified figures showing how the fruits of production are distributed among the various sections of the community.

"The I.P.A. Review" asks these pertinent questions: Is it true that workers are worse off than before the war, either absolutely or comparatively with other sections of the community? Is there scope for increasing wages at the expense of other sections without raising prices? Is the wage-earner to-day receiving a greater or a smaller share of the national cake than before the war? Is he receiving a fair share?

In order to provide an effective answer to these questions, experts of the Institute studied wage statistics as issued regularly by Commonwealth and State Statisticians; the company profits in manufacturing compiled by the Commonwealth Bank; national income estimates published with the Commonwealth Budget papers; the distribution of the national income as disclosed by the annual reports of the Taxation Commissioners; Savings Banks' figures; and facts and figures concerning retail expenditure and food consumption.

Armed with the statistical data thus forthcoming, the Institute has drawn up a series of tables which demonstrate, in whatever manner the issue may be viewed, that the post-war worker is better off absolutely, and relatively to all other sections—excepting the farming community—than was his pre-war brother.

Take, for example, the following comparison of the distribution of personal income:

	Percentage of all personal incomes, excluding farmers.	
	1938-39.	1948-49.
Wages and salaries	66.0	69.1
Social Services	4.6	6.8
Unincorporated businesses	70.6	75.9
Rent and interest	12.8	13.8
Dividends	12.9	7.8
	3.7	2.5
	100.0	100.0

"This table very clearly shows," says "The I.P.A. Review," "that wage and salary earners are much better off in relation to shareholders and property and bond holders, even before the levelling effects of personal taxation are taken into account."

Turning to wages and salaries in the manufacturing industries during the ten-year period 1938-39 to 1948-49, "The I.P.A. Review" shows that the stepping-up of the male wage from £211 in the earlier period to £433 in the later spelt an increase of 105 per cent., while the female wage soared from £105 to £240, registering an increase of no less than 129 per cent. The salaries of males rose from £356 to £621, or 74 per cent., and of females from £140 to £260, or 86 per cent., in both cases a considerably lower percentage increase than the corresponding wage class.

Statistics which record wages and salaries in manufacturing as a proportion of the net value of production furnish an excellent indication of

THE AUSTRALASIAN MANUFACTURER

[Page 16, May 6, 1950.]

the distribution of the proceeds between Industry's partners. The following facts, accordingly, are particularly significant:

Wages and Salaries as a percentage of Net Value of Production:

(N.S.W.) All Factories.	
1938-39	49.4
1947-48	57.3
1948-49	58.3

The share of the proceeds paid to employees in 1948-49 was, as a matter of fact, the highest ever recorded in secondary industry.

It is estimated that the net proceeds of New South Wales manufacturing in 1948-49 were distributed as under:

	%	Share per £.	
		s.	d.
Wages and salaries	57	11	5
Overhead expenses	21	4	2
Taxation	8	1	7
Reserves	9	1	10
Dividends	5	1	0
	100	20	0

"It is clear," says "The I.P.A. Review," "that an increase in wages of 10 per cent., failing any increase in prices or productivity, would completely wipe out dividends. Average wages paid to male factory workers increased by 13 per cent. between 1947-48 and 1948-49. It is obvious that in the absence of an increase in productivity per man (the Queensland Bureau of Industry estimates that productivity per man in Queensland increased by only 2 per cent. between 1947-48 and 1948-49), a wage increase of these proportions must cause a serious rise in prices if manufacturing concerns are to pay dividends to their shareholders."

The facts and figures here recorded prove beyond all shadow of doubt, first, that the wage-earner of to-day is not only better off than he was before the war, but also that he is much better off in relation to shareholders and property and bond holders; and, second, that such increases as have taken place in man-hour output are out of all proportion to the increases in wages. It follows, therefore, that nothing short of a nation-wide drive to increase production to vastly higher levels will permit, without higher prices, a continuance of high wages.

Pithy Jottings of Industry and Industrialists



To mark the visit to Sydney of Mr. James F. Lincoln, President of The Lincoln Electric Company, Cleveland, Ohio, prominent industrialists and personalities gathered at the Hotel Australia last week. Our pictures show: (upper left) Mr. W. I. Miskoe, Managing Director, The Lincoln Electric Company (Aust.) Pty. Ltd.; Mr. Morris Samuels; Mr. W. J. Smith, Managing Director, Australian Consolidated Industries; Mr. James F. Lincoln; Mr. T. Murray, Chairman of Directors, British Oil Refineries (Aust.) Pty. Ltd.; Mr. Frank Packer, Managing Director, Consolidated Press; (upper right) Mr. C. C. Corbett, Commissioner, Water Conservation and Irrigation Commission; Mr. W. R. Beardon, General Manager, British Standard Machinery Co. Ltd.; Mr. J. O. Ogden, Managing Director, Welded Products Ltd.; Mr. H. P. Large, Production Manager, British Standard Machinery Co. Ltd.; Mr. J. C. Small, Assistant Managing Director, British Standard Machinery Co. Ltd.; (below) Mr. E. Pysden, Registrar, Australian Institute of Management; Dr. R. K. Murphy, Principal, Sydney Technical College; Mr. J. N. Kirby, Managing Director, James N. Kirby Pty. Ltd.; Mr. J. Shaw, General Manager, Electric Control & Engineering Ltd.

MATERIALS HANDLING EQUIPMENT SPECIALIST GOES ABROAD.

Mr. V. Magnus, managing director of Magnus Industrial Equipment Pty. Ltd., one of Australia's leading specialists in materials handling equipment, last week sailed for England on the Orcades.

He is going over primarily to obtain the very latest information on materials handling at the Materials Handling Exhibition in England.

He is also spending some considerable time at the plant of Geo. W. King Ltd., the largest materials handling manufacturers in Europe, to advise them on Australian requirements and also to discuss various aspects of manufacture of the many pieces of equipment manufactured in Australia by Magnus Industrial Equipment Pty. Ltd.



There are several other well-known companies represented by

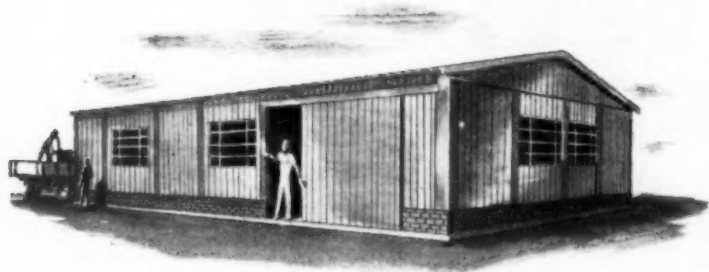
Magnus Industrial Equipment, which will be brought into discussions covering the methods required to be adopted in Australia.

This trip of Mr. Magnus follows a previous one to America, where he obtained the latest information from that country, and it is anticipated that he will be away approximately six months.

OVERSEAS VISIT BY M. B. JOHN EXECUTIVES.

For the purpose of investigating the latest developments in machine tools and production methods, Mr. Morgan B. John, joint managing director, and Mr. David L. John, production manager, of M. B. John Ltd., Ballarat, Victoria, left for U.S.A. by plane on 28th April. After some weeks in America they will continue on to England and the Continent. They expect to be absent for about five months.

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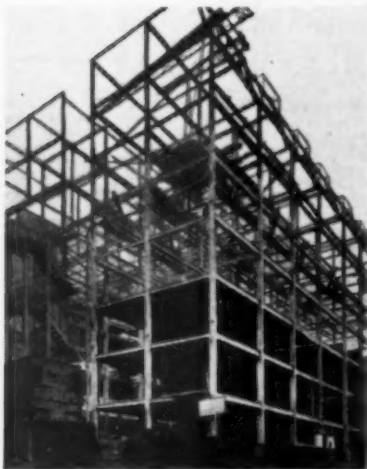
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Our editorial representation in each State makes regular calls on manufacturers, but if YOU wish to see some particular phase of your business given publicity, communicate immediately with the Editor, and he will arrange for a representative to call.



Around & About the FACTORY



A digest of new factory and plant construction, additions, alterations and improvements, and operating news of Australian industry.

World Famous "Rockbestos" Cables and Flexibles

To be Manufactured in Australia by
Cable Makers (Australia) Pty. Ltd.

The recent announcement released by Cable Makers (Australia) Pty. Ltd., to the effect that the world famous "Rockbestos" Cables and Flexibles were now being produced in their modern Liverpool (N.S.W.) plant has aroused widespread interest throughout the trade. Recognised for many years as being one of the most outstanding products of their kind, their production in Australia marks a noteworthy contribution to the cable making industry of Australia and forms a welcome addition to the already extensive range of quality wires, flexibles and cables now being manufactured by the progressive Cable Makers (Australia) Pty. Ltd. organisation.

"We are manufacturing these asbestos insulated cables and flexibles under exclusive licence

from the Rockbestos Products Corporation, Connecticut, U.S.A.", said Mr. M. Dillon, Secretary of Cable Makers (Australia) Pty. Ltd. recently, "and plan to produce them in a wide variety of types and constructions to meet every need of Australia's rapidly expanding industries."

Specially processed to withstand high temperature heat, the asbestos insulation that is a feature of Rockbestos cables and flexibles is formed by a patented process into a firm, dense and permanently flexible insulation that is thoroughly impregnated with heat and moisture-proof cements. The construction of this insulating wall is such that it has no laps, joints or seams, and is impervious to deterioration from heat, fume oil, grease, age or vibration. Although Cable

Makers (Australia) Pty. Ltd. plan to manufacture many types of Rockbestos cables and flexibles, three constructions are standardised and merit individual mention. These are:—

(1) C.M.A. ROCKBESTOS HEATER CORD FLEXIBLES, which consist of a standard range of tinned copper conductors insulated with special heat-resistant rubber dielectric, plus an additional asbestos insulation. These are particularly recommended for all electrical appliances where the ordinary rubber flex shows deterioration from heat. They are also suitable for leads to small motors, pendants and street lights where the flexibles are subject to heat from the lamps.

(2) ROCKBESTOS A.V.C. CABLES: This construction, originally developed and patented by the Rockbestos Products Corporation, con-

sists of an insulation in which varnished cambric is incorporated between two layers of felted asbestos. It has a high dielectric strength, but in view of the limiting properties of the varnished cambric, these types are intended for use at temperatures not exceeding 100 deg. C.

(3) ROCKBESTOS A.L.L. ASBESTOS INSULATED CABLES: Specially designed for use at higher temperatures up to 150 deg. C., these cables are eminently suitable for wiring stoves, ranges, heating appliances, switchboards, arc-lighting equipment and for any application where high temperature conditions are likely to be experienced.

All are approved by the State Electricity Commission of Victoria and the Sydney County Council.

Prefabricated Steel Buildings

Solve Manufacturers' Space Problems

A. J. Anderson & Co. Pty. Ltd., of 19 King Street, Melbourne, are solving the building problems of a number of Australian manufacturers by supplying prefabricated steel buildings, which are available for erection approximately eight weeks after the placement of the order.

Requiring a minimum of skilled labour for their erection, these prefabricated buildings are made entirely from imported materials, and their erection, therefore, does not interfere in any way with the Australian housing programme.

While building permits are still necessary, of course, it has been found in practice that no permit has yet been refused—information of great interest to many manufacturers who have been unable to secure permits for urgently required extensions, or for the erection of new factories.

The buildings are supplied in two designs—the well-known Quonset structures built in a series of arches—and the Sidney Williams "Steel-Fram" straight-sided, gable-roofed buildings.

The Quonset 40 ft. x 100 ft. building unit comprises 6 in. x 2 in. 12

gauge "Stran" I-sections bent into semi-circular arches of 40 ft. internal diameter. Each arch is divided into segments approximately 21 ft. in length for ease of transport. Each set of 26 arches covers an internal area of 4000 sq. feet.

The units are usually erected singly, but can be used to form composite structures covering any required area. The use of units in multiple increases the coverage per unit, while the structures lend themselves readily to conversion for many purposes.

A team of five or six men can erect a building off a concrete base and floor, including bulkhead and sheeting, in two weeks.

The price of a 40 ft. x 100 ft. Quonset is £1975 approx., which compares more than favourably with any other type of structure and offers large savings over conventional type buildings constructed of imported materials—as so many are to-day. Quonsets are also available in multiple units in which the arches conjoin to give extra width while retaining the same features of unlimited extension in length.

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Sidney Williams "Steel Frame" buildings with straight-sided walls and gable roofs are available in sizes 60 ft. x 20 ft. (10 ft. walls), 80 ft. x 30 ft. (12 ft. walls), and 100 ft. x 40 ft. (12 ft. walls). The prices are £625, £1325, and £1925, respectively, comparing favourably with other types of structure. They are ideal for wide-span buildings, and, when necessary, extensions, alterations and partitions may be added economically and without waste.

Thoroughly tested during the war, the latter structures are well adapted for use as factories, garages, and service stations, wharf buildings, wool sheds, etc. With interior lining added, they make satisfactory living quarters, dormitories, offices, recreation centres, canteens, and so on.

They are supplied with window frames, ready for the insertion of glass, and with "Steel-Frame" sliding doors complete with Bangor track or, in the case of the smaller model, with steel framework for one pair of doors to suit approx. 10 ft. x 10 ft. opening.

Another interesting structure is the Buckchurch Suspension building. In a width of 115 ft. and length of 300 ft. (34,200 sq. ft.), this is available at a cost of £11,000, complete with ends. The first imported model was sold to a Government authority, and tests in England have proved their resistance to a windloading of 120 m.p.h. Enquiries should be directed to A. J. Anderson & Co. Pty. Ltd., 19 King Street, Melbourne.

Time Recorders and Watchmen's Clocks

Marketed by International Business Machines Pty. Ltd.

Accurate methods of time-keeping are absolutely indispensable to high output and low costs. Indeed, unless to-day's industries are backed by well-devised systems of scientific costing they can lay claim to neither modernity nor efficiency.

Obviously, accurate time-keeping methods demand an array of time-recording equipment, equipment which not only measures with precision the time involved in each individual manufacturing process, but also records that time with legibility, thereby ensuring permanent records.

As inevitably happens, the demand is being met, by manufacturing organisations which are ever on the alert to meet each new need as it arises—and even to anticipate coming needs. For example, International Business Machines Pty. Ltd., which enterprise operates in Sydney, Melbourne, Brisbane, Adelaide, Perth, and Hobart, is marketing a range of time-recording machines which is effectively meeting the Australian demand for these up-to-date business essentials.

The "I.B.M." automatic time recorder, for instance, provides accurate legible records of em-

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ployee attendance time. Because of its compactness and its scientific design, this time-recorder is easy to audit. In addition, it permits quick accurate comparison of job time with attendance time, thereby providing an accurate basis for the estimating of wages, to the benefit of both employer and employee.

Another important mechanism is the "I.B.M." job-recorder. This eliminates the use of "lead pencil" methods of recording on a job sheet, substituting instead a correct easily-read machine-printed time record. Its use spells the reduction of disputes and errors, and completely cuts out the "leave-it-til-later" attitude which invariably leads to dissension and discord.

The "I.B.M." wall-clock may well be regarded as part of the standard equipment of the up-to-date factory and engineering plant. Its special merit lies in the fact that it clearly indicates the correct time of day without "step-ladder" regulation and free of electrical power faults. Clocks throughout an enterprise are synchronised, with the consequent synchronisation of the activities of departments and individuals.

None will dispute that a correct and reliable start-stop signal is an important contributing factor to harmonious employer-employee relationships. The "I.B.M." start-stop signal clearly indicates an employee's work schedule, signals being heard at starting time, at morning tea, at lunch, at afternoon tea, and at the end of the working day. The substitution of mechanical accuracy for fallible human guesswork means for the workers a system of start and stop signals of complete dependability.

Another particularly interesting unit marketed by International Business Machines Pty. Ltd. is their watchmen's detect clock. This time-piece is of particular significance in these days of large-scale thefts and hold-ups. For it provides the employer with a printed record showing the watchmen's hours on the job and where those hours have been spent. It indicates clearly the measure of the watchmen's alertness and reliability.

All of the time-recording apparatus here briefly described operates on the most modern principles, the various machines having been designed by experts for the fulfilment of specific jobs. Utilised with intelligence and care, therefore, they are capable of rendering valuable service to every factory and engineering plant.

EXPORTING MACHINERY TO EUROPE.

Mr. R. H. Wilson, a director of Vacu-Blast (Aust.) Pty. Ltd., of Melbourne, has returned to Australia after a visit to England and the Continent. Mr. Wilson said that his Company is exporting portable blast cleaning machinery to Western Europe.

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A Safety Device for Cranes

The Safe Load Indicator

To-day, when a crane driver picks up a load he is able to tell at a glance whether it is safe to lift, for Safety Laws make warning devices compulsory. In days gone by accidents were all too frequent; loads were grappled beyond the crane's capacity, hooks caught on immovable obstructions, with a tragic tally of toppling cranes and maimed drivers.

To combat this, weighing hooks were tried. They showed the actual weight of the article being lifted, but indicated the safe load for the crane at only one inclination of the jib. Now, they do not satisfy the law.

The "Indicator" described has the advantage that it indicates to the driver that a load, however light, has been applied to the hook. The pointer creeps up towards the danger marks as the crane jib is luffed out and creeps back as the jib radius is reduced. Thus the driver has ample warning that his load is approaching or leaving the danger point. In case his eyes or attention are distracted an alarm bell is also fitted.

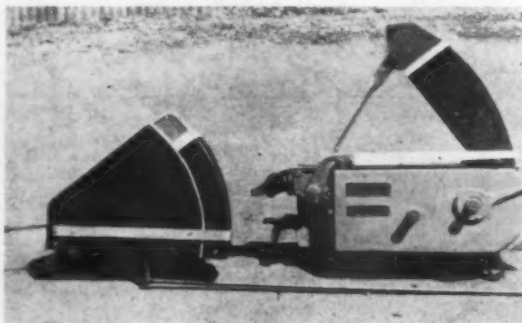
Many crane manufacturers take advantage of the movement of the mechanism in the Indicator Box to operate motor cut out switches or overload which supplies further safety for the driver inasmuch that he cannot, under any circumstances, lift a load in excess of the capacity of the crane.

The "Indicator" is an unobtrusive case bolted to the side of the jib. The exterior is plainly marked off into three segments — "safe-working," "maximum," and "danger"—along which moves a pointer easily visible from the cabin.

The fitting of the "Indicator" is a simple matter. It is easily attached to any type of jib but is only an auxiliary to it, not an integral part, and damage to one does not affect the other.

The "Indicator" brings safety and easier working to the crane-driver.

To the owner it offers the economy of lower insurance rates and the advantage of constantly being able to use the crane at full capacity. A saving of time is made in such work as the laying into place of a large stone or girder, when it is often necessary for the crane to "take the weight" while the mason or fitter moves the article into its



Two types of the Crane described in the accompanying article.

exact place. In such cases the driver can see by the movement of the scale pointer when he has taken the weight without actually lifting the article. This is most useful when the load is out of the driver's sight.

The main components of the "Indicator" are common design to all Jib Cranes, the pulley pin size and method of attachment being the variables. In fitting the device an eccentric sleeve is interposed between the jib-head pulley and jib-head spindle in such a position that the weight on the bond rope tends to turn the eccentric. The original spindle is used so there is

no reduction in strength at this point.

Fixed to the eccentric is a tension arm connected by a rod to a compression spring inside the indicator box. The rod can be made to fit any shape of jib. The compression spring in the box abuts against a trunnion carried on a rocker and movement of this rocker has the effect of varying the stress in the spring.

Another rod goes from the body of the crane to a cam pivoted within the box. This cam is so cut that

included graduated electrical gauges for the drivers' cabins as well as height-of-lift and radius indicators.

A modified form of "Indicator" protects travelling hoists and their operators. Attached to the usual suspended push-button hoist control is a compact unit of red and green lights. Green indicates that the hoist is carrying less than maximum load, green and red together that maximum has been reached, and red alone, danger.

Another application that is finding favour with efficient and safety-wise operators is in goods lifts. The simple fitting of green-red lights in the lift itself, which can be done by the owner, soon pays for itself in time saved carrying maximum loads.

The "Indicator" for cranes has recently been re-designed with an even more compact casing. Both the original and the new models are of sturdy weatherproof construction. [2447]

New Plate-Type Rheostat

Made specifically for field control of d.c. shunt- or compound-wound motors, self-excited generators, exciters, separately excited generators and synchronous motors, this rheostat will be suitable for many machine installations, including motor-generator sets. There are three types available: the 6, 9, and 12 in. forms, with 27, 52, and 70 resistance divisions, respectively.

This rheostat features adjustable stops which limit the dial switch movement at each end of travel. These stops are adjustable through a 90 deg. angle and allow the adjustment of the maximum and minimum resistance possible to cut in or out of circuit. Handwheel operating mechanisms and sequence drives allow two plates to be operated in sequence by the rotation of a single handwheel.

Thus the whole action is automatic and the margin of safety shown by the pointer coincides with the limits of each jib-angle of the particular crane.

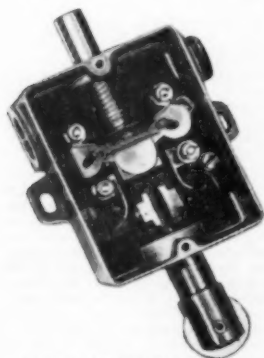
A recent shipment of "Indicators"

Easily detachable conduit boxes, which cover the terminals, are provided as optional items for open type plates and standard items on enclosed plates. [2431].

Loom Pilot Switch for Remote Control

Among the range of new control devices now in production is the loom pilot switch illustrated below, which is primarily intended for the mechanical remote control of automatic electric motor control gear.

For operation by cam, lever, striking gear or beam, the applications of this switch on textile looms, machine tools, and electrical apparatus are claimed to be many and varied. It may be wired for non-reciprocal switching and for the momentary operation of



Switch for Remote Control.

solenoid actuated air valves, magnetic brakes, and similar equipment.

Both sliding and toggle contacts are incorporated, the latter being arranged to break after the circuit has been made through the sliding contacts.

Rust-proof finished throughout, and housed in a stove-enamelled die-cast case, which has 2 in. conduit entries on both sides, the loom switch is available with spindle or roller head, and measures 5½ in. top to bottom when fitted with roller, and 5½ in. fitted with spindle, by 3½ in. across, including fixing holes. The depth front to back is 1½ in., and spindle travel is ½ in. [2430].

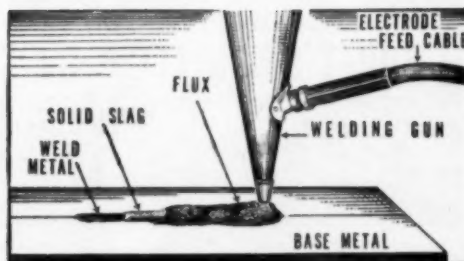
Better Guards for Draw Frames "Streamlining" Existing Installations

The accompanying illustration shows details of a special type of interlocking guard which completely encloses the gearing end of a draw frame and prevents access

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SWIFT NEWSLETTER No. 39

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to the draft gearing except when the machine is stopped. This system is designed to provide for existing equipment the same standards of safety and cleanliness as is built into the totally enclosed design of modern machines.

A vertical flat cover plate completes the enclosure of the mechanism below the hinged guard. This has been removed in the illustration which shows the main guard lifted and all parts of the mechanism readily accessible.



Machine guard described in the accompanying article.

The essential feature of the arrangement is the two way interlocking device which ensures that the drive cannot be engaged when the guards are open; and which locks the guards in the closed position when the machine is running.

This is achieved by means of simple attachments to the belt fork assembly, one of which consists of a vertical bar with a short rod clamped by adjustable means at its upper end. This is so adjusted that the hinged guard, when lifted, obstructs its movement, and the belt fork is then prevented from moving into alignment with the fast pulley. On the other hand, in the closed position a hole drilled in the side of the guard allows the rod to enter so that the belt can move inward to the driving position. And in this position the guard is locked against opening by the engagement of the rod in the hole. A second part, consisting of a rod bent at right angles at the end, is also attached to the belt fork and extends horizontally below the pulleys. This engages in a hole at the front end of the guard so that there is two point positive interlocking when the belt is in the driving position.

Many types of guard on existing machines do not totally enclose the mechanism, nor is there any automatic device to prevent their being left open to expose the gears when the machine is running. This inexpensive equipment eliminates both faults. It is manufactured and installed according to any specific requirements. [2445]

Floating Vane Pump Has New Type Action

The new pump described features a pumping action resembling that of a square piston travelling smoothly and continuously in a square cylinder of infinite length. This action gives the features of a turbine having positive displacement. The pump will handle liquids, gases or air.

A unique arrangement of the yoke-cross head and off centre pin give good radial control of the vanes, and the use of pre-loaded deep groove sealed ball bearings give firm lateral control. This accurate control allows the vanes to "float" in the working chamber without touching either the sides or race. Wear is therefore at a minimum, even when pumping non-lubricating fluids.

These pumps are self priming, do not contaminate liquids by bearing lubrication, and will handle liquids up to 212 deg. F. They operate in either direction, and will pump light or heavy fluids at high vacuum and static head. They are made of cast iron, bronze, or cast iron with

bronze fittings, and pump 10, 15, or 20 gpm at 0 psi, depending on size. Recommended operating pressures vary from 0.50 to 0.70



Features of the pump illustrated include floating vanes, rotary positive displacement, greater volume and pressures in non-lubricating fluids without wear, new mechanical seals, new pumping action, and an oversized shaft.

psi, depending again on size. These pumps have 1 in. suction and discharge pipes. [2441].

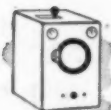
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INQUIRIES FOR PLANT MATERIAL AND AGENCIES

"THE AUSTRALASIAN MANUFACTURER'S" INQUIRY DEPARTMENT

This Inquiry Service is for the use of readers of "The Australasian Manufacturer" who wish to trace suppliers of Plant, Equipment and Materials, and for particulars of agencies offered. Address your inquiry to the Inquiry Department, and give the fullest possible particulars to enable us to put you in touch with the best sources of supply. **INCLUDE A STAMPED SELF-ADDRESSED ENVELOPE WITH YOUR INQUIRY.** It is essential that telephone inquiries be confirmed by letter. No charge is made for Inquiry Services, but normal advertising rates will be charged if agencies are sought by manufacturers' representatives or if goods are offered for sale. For the benefit of new subscribers, inquiries will be published in two or more consecutive issues.

SPECIAL NEW INQUIRIES.

WHEN REPLYING to an Inquiry, please quote the Reference Number and send your reply to the Inquiry Department, "The Australasian Manufacturer," 16 Bond Street, Sydney. **INCLUDE A PLAIN, STAMPED ENVELOPE** so that we can forward your reply to the Inquirer.

ELECTRICAL CONNECTORS: Government Department desires to contact the Australian Agent for Simmonds & Stokes Ltd., of London, makers of "Niphan" brand electrical connectors. Alternatively, they desire to contact Australian manufacturers capable of supplying a corresponding range of connectors, which would be interchangeable with "Niphan" plugs and sockets, which are used very extensively on British Service equipment. Write to Ref. 8157, c/o "The Australasian Manufacturer."

INDUSTRIAL VACUUM SWEEPERS: New Zealand firm is contemplating the purchase of a mechanical sweeper for its fac-

LATHE FOR SALE: 15 in. Centres, All Geared Head, 4 1/2 in. Hollow Spindle, complete with 25 H.P. Motor. Splendid order. Write to Ref. 6357, c/o "The Australasian Manufacturer."

tor aisles. They want a unit having a sweeper brush about 4 ft. wide and a vacuum pick-up. The material to be picked up will include chalky dust used so widely in rubber manufacturing operations. If you are interested write to Ref. 8158, c/o "The Australasian Manufacturer."

BITUMEN MATERIALS — AGENCY AVAILABLE: A large British firm specialising in the production of Bitumen materials—anti corrosive solution, wood preservative, bituminous solution and enamel, disinfectant fluid and sprays, marine glue, and compounds and varnishes for the electrical industry—is interested in appointing an Australian organisation to represent them in all States of Australia. The name of this firm will be supplied on application to Ref. 8159, c/o "The Australasian Manufacturer."

MANUFACTURERS! W.A. REPRESENTATION: Are your products represented on W.A. Goldfields? Experienced Agents possessing good connections and credentials are seeking to represent Manufacturers of quality products on the Goldfields, particularly the Gold Mining Industry. Apply "Goldfields", c/o "The Australasian Manufacturer", Box 1687, G.P.O., Sydney.

MILD STEEL BARS WANTED: Sydney firm urgently requires to purchase mild steel bars (bright or black) 1/2 in. x 1/2 in. or 1/2 in. x 1 in. Any quantity appreciated. Replies to Ref. 8160, c/o "The Australasian Manufacturer."

WILL YOUR PLANT PRODUCE SAWS? Adelaide organisation is seeking firms in any State or in United Kingdom with existing or potential capacity to produce hand, panel, tenon and circular saws, to supply an already established market. The firm states it can, if necessary, help with steel supplies. If interested, write to Ref. 8161, c/o "The Australasian Manufacturer."

ENGINEERING CAPACITY AVAILABLE: A small exclusive engineering shop requires an additional small product for manufacture and assembly. They would consider enquiries from large firms who wish to off load

due to lack of capacity. Write to Ref. 8154, c/o "The Australasian Manufacturer."

STEEL TUBE AND CONDUIT WANTED: 1,000 yards of 1 1/2 in. Diameter Steel Tube and 1 1/2 in.

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urgently required by Sydney
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AVAILABLE: Melbourne Com-
pany has available about 1 ton
each 20 gauge and 16 gauge
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ranging from 21 in. to 31 in. dia-
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WATER TUBE BOILER
WANTED: Victorian firm urgently
requires a new or second-hand
Water Tube Boiler, approximately
3,000 sq. ft. heating surface and
operating pressure of 250 lbs.
p.s.i. If you can supply, write
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**AGENCY FOR PEPPER,
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Spanish firm of exporters, desires
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the following items: Ground
Pepper (Paprika); Saffrons,
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interested write to Ref. 8153, c/o
"The Australasian Manufacturer."

**AUTOMOTIVE PARTS AND
GARAGE TOOLS:** Indian Firm
desires to contact Australian
firms manufacturing Automotive
Replacement Parts, Small Hard-
ware, and Garage Tools. Write
Ref. 8150, c/o "The Australasian
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**ELECTRICAL INSTRUMENTS
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Bombay firm desires to hear from
Australian makers of Automotive
Battery Chargers, Battery Cell
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Ref. 8149, c/o "The Australasian
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COPPER COATING PAN
WANTED: Sydney firm wants to
purchase a 30 in. internal dia-
meter copper coating pan, com-
plete with rotating gears and belt
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FOR EXCHANGE:** Melbourne
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Black Steel Sheets, for 1 ton
3/16 in. Bright Wire, or 1 ton
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MOTORS:** Manufacturers who
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1/20th to 1/30th H.P., 240 volt, 50
cycles, 1,400 R.P.M., in lots of
12 to 50, are requested to write
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particulars and sketch showing
outside dimensions. These mo-
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small double worm reduction
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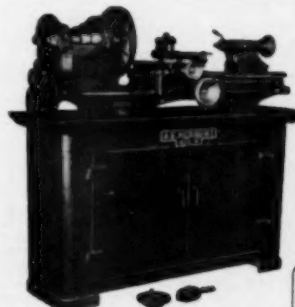
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Timken Bearings.
Hollow Spindle 1 in. bore.
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Radial Drilling Machine.

Machine Production and Gear Generation

Success of G. L. Sheraton of Fairfield, Victoria

It is a widely-established fact that when an enterprise expands beyond a certain critical limit a number of essential safeguards must be adopted to counteract the tendency towards decreasing individual and departmental efficiency, resulting from the loss of the "personal touch."

This tendency is overcome in larger organisations by adopting assembly line methods of production, increasing mechanisation in the performance of individual tasks, and by the practical adaptation of time and motion research to attain a high overall degree of operator-machine efficiency.

In addition, it is necessary to provide a large network of foremen, departmental managers, and executives—to which must be added personnel officers of considerable insight and pleasant personality to select staff, to iron out "grouches" before they spread, and to group staff units according to individual compatibility.

The development of these departments—if they are permitted to snowball beyond a certain fixed minimum—tends to add considerably to overhead. If this increase reaches a point where it counterbalances, or nearly counterbalances, the savings achieved by the adoption of assembly line methods, then the competition from smaller organisations producing under more individual conditions becomes very keen indeed.

It is this delicate balance between the two opposing elements, each with its own characteristic advantages, which has brought about the industrial progress which is a feature of Western Civilisation to-day. And it is an axiom of this truth that there is always room at the top for men of insight and ability to produce precision equipment of a standard at least equal, if not superior, to, the most widely distributed mass produced article, while comparing more than favourably as regards price.

It is a happy task to be able in this article to review the outstanding progress that has been achieved by G. L. Sheraton, Manufacturing and General Engineer of 445 Heidelberg Road, Fairfield, Victoria.

After serving his time as a Fitter and Turner at Ramsden & Chaplin Pty. Ltd's workshop in Clifton Hill, Melbourne, and while gaining experience in various industrial enterprises in that city, Mr. Sheraton was struck by the possibility of improvements to a number of basic engineering units.

While actively engaged in war production, he was able to give only spare time attention to drawing up blueprints for these improvements. When the war ended, however, Mr. Sheraton began to give more practical expression to his ideas, first with a small staff of co-operative workers, and then, as the Australian Engineering and Automotive Trades learned to appreciate more and more the value of his contributions, with expanding personnel and increased plant.

While installing the most modern machinery, and rapidly increasing his plant capacity to overtake the growing demand from all over the

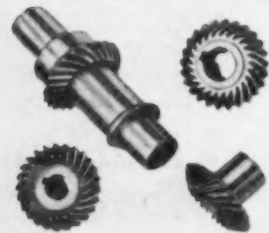
Commonwealth, however, Mr. Sheraton was able to retain the friendly spirit of co-operative endeavour which has been a feature of this firm's rapid development.

By developing a closely knit, personally selected unit of experts working harmoniously together, it has been possible to make each man virtually his own supervisor.

By exploiting this individual approach in industrial production to the maximum, and by ensuring that every item of equipment produced and every job undertaken conforms to the most rigid specifications, it has been possible to build up a reputation for quality and economy which has become a by-word throughout industry.

One of the far-sighted moves by Mr. Sheraton was the early purchase and installation of a Gleeson Spiral and Zerol Gear Generating Machine. On this machine are produced a large number of gears for use in the manufacture of

machines made by this firm for the engineering trade, as well as gear generation for the trade in general.



Typical Spiral Bevel Gears generated by G. L. Sheraton.



Mr. G. L. Sheraton.



Section of workroom showing compact layout.

Installed after extensive research on gear generating, this machine is capable of generating spiral and zero gears from as small as 3/16 in. diameter. Costing no more than straight bevels, these it is claimed by Mr. Sheraton have the following advantages:

- (a) With as many as 5 teeth in constant mesh the load is proportionated out, reducing the shock or load on any one tooth.
- (b) A silent, smooth action is achieved which reduces vibration to the minimum.
- (c) Localised tooth bearing allows greater tolerances in assembly.
- (d) The curved teeth achieve more efficient lubrication by keeping the lubricants constantly between the mating surfaces.

Gears are made in a range of from 3/16 in. to 3 1/2 in. diameter, 12

D.P. to 50 D.P., and in sizes from 12-teeth pinions to 100-teeth crown wheels. Quotations are available for the production of spiral bevels for all general engineering and automatic assemblies, and any information regarding the outstanding performance of these gears will be supplied on request.

A Fellow Spur Gear Generating Machine has also been installed on which spur gears are generated to the same accurate specifications which are a feature of all Sheraton gear production.

SHERATON ENGINE LATHES

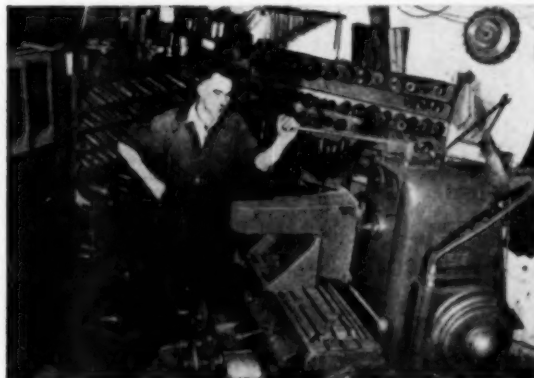
Marketed by the Demco Machinery Co. Pty. Ltd. of 243 Cleveland Street, Sydney, and 355 William Street Melbourne, the New Sheraton Engine Lathe has found wide popularity in workshops throughout the Commonwealth as well as in Government departments and factories. Admitting 24 ins. between centres, the length of the bed is 42 ins. while swingover bed is 9 1/2 ins. and swingover saddle 5 1/2 ins.

A full line of accessories is marketed for this lathe which includes four-way tool holder, vertical milling attachments, taper turning attachments, travelling steady rests, etc.

In addition to the standard model engine lathe, a Sheraton 4 1/2 in. toolroom lathe is produced which is finding wide application within its field. Equipped with all standard accessories, this lathe is in operation in a number of workshops and reports have been unanimously appreciative.

Also handled by Demco Machinery Co. Pty. Ltd., is the New Sheraton Surface Grinder. Specifications are: Table Travel 12 ins.; Cross Travel 6 ins.; Admits under 7 in., Wheel 9 ins. of rugged construction, this machine is designed and built to give years of solid and satisfactory service with a minimum of attention.

G. L. Sheraton also markets through Wescott Hazell Engineering & Steel Pty. Ltd. a number of machines and appliances designed specifically for the automotive trade, but often having wider application.



Horizontal Milling Machine working on surface grinder base.

"TRU-BOR" CYLINDER BORING BAR

Chief among these is the "Tru-Bor" Cylinder Boring Bar which is a precision tool capable of boring cylinders within the finest practical tolerances provided reasonable care is exercised in its operation.

After each "Tru-Bor" is assembled at the factory, it is tested and then given a protective coating of grease which ensures its arrival in perfect condition at its destination. After removing the coating with a cloth soaked in petrol (not kerosene), it is necessary only to wipe over finished metal parts with fine machine oil and the unit is ready for operation.

Guaranteed unconditionally for 90 days the "Tru-Bor" represents a new standard in re-boring equipment. Having an 11 in. bearing accurately honed for the main bar which is lapped to fit it, the "Tru-Bor" does not rely on the three-point centering needles for steadiness—although these may be used as an extra support.

Once it is set up on the cylinder and the anchor clamp in position with the handle tightened, the cutterhead cannot be retracted too far as it has a positive stop located at the very top of the bar. When the cylinder has been bored, an automatic stop shuts off the motor. Each operation takes only a short time, and after practise in setting up the boring can be done in a few minutes.

SHARPENING THE CUTTING TOOL.

A feature of the "Tru-Bor" is the diamond lap fitted to the top gear box. It is on this surface impregnated with diamond dust that the tool bit is lapped. It is important to note that this is provided to grind the tip and not the shank of the tool bit. As the shank is made of steel it would quickly clog the lapping surface.

There are two faces on the tool bit to be ground, and to do this a special sharpening jig is supplied. It is advisable to leave .003 ins. for a finish cut if a bore to a finish is required. To do this two tool

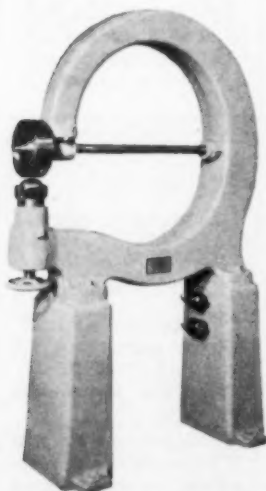
holders should be used, one for roughing and one for finishing.

Full instructions are supplied with each "Tru-Bor" for setting up and selecting the correct needles for the cylinders to be bored.

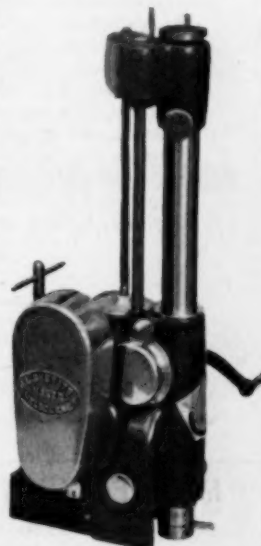
SPEEDS OF THE "TRU-BOR" MACHINE

The "Tru-Bor" Boring Machine has two speeds, high speed, 380 r.p.m. and low speed, 250 r.p.m. The low speed has a twin pulley, and on this two belts are used. This twin drive, which is used mostly for sleeving, allows cuts of up to .060 ins. to be made.

The high speed 380 r.p.m. pulley is a single drive and uses a single belt permitting cuts of up to .025 ins. at this speed. To change belts



Automotive Panel Wheeling Machine.



"Tru-Bor" Portable Cylinder Boring Machine.



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There have been many approaches to the problem of making a really satisfactory box spanner—casting, forging, machining from bar stock, and so on. But B.T.M. found that the cold-manipulation of Cold Drawn Precision Seamless Steel Tube was the only way that reliably held the original steel quality and provided a spanner that really was tough, durable, and dependable. The "Apollo" Spanner range, available in all standards, and proved in practical use under all conditions, is produced by British Tube Mills (Aust.), Pty. Ltd., Kilburn, South Australia.



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it is only necessary to lift the motor in its cradle when the belts become sufficiently slack for a quick changeover. The floating cradle to which the motor is fitted automatically adjusts the tension of the belts.

The "Tru-Bor" is made in two models. Model 1 bores cylinders from 1.750 ins. to 3.250 ins., while model 2 bores cylinders from 2.2 ins. to 4.26 ins. Both models are supplied complete with all the necessary accessories.

Other machines designed and manufactured by G. L. Sheraton include an Automobile Panel Wheeling Machine as well as a large number of attachments and appliances for the engineering and automotive trades. Among these are slotting attachments, offset boring bars for milling machines, and drilling machines.

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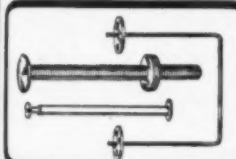
Organised by Trade Associations representative of engineering manufacturers in the Scandinavian and Western European countries, this Congress provides an international meeting place for engineers for the purpose of discussing papers prepared by men with day-to-day industrial experience rather than a bias towards the purely scientific approach.

In 1949, at Paris, delegations from 16 countries participated in a full programme, which included not only papers read on the subject of "Production Efficiency" but also visits to industrial undertakings in France.

For the Third International Mechanical Engineering Congress to be held at Brussels, 18-23 September, 1950, the Organising Committee has selected "Quality" as the theme. Papers dealing with specific aspects of this theme have been invited from various European experts, and the activities of the participants at this year's Congress will include visits to some of the principal manufacturing plants in Belgium.

The customary detailed programme listing the titles of papers with names of those presenting them and full information, with application forms, will be available from: The British Engineers' Association, 32 Victoria Street, London, S.W.1.

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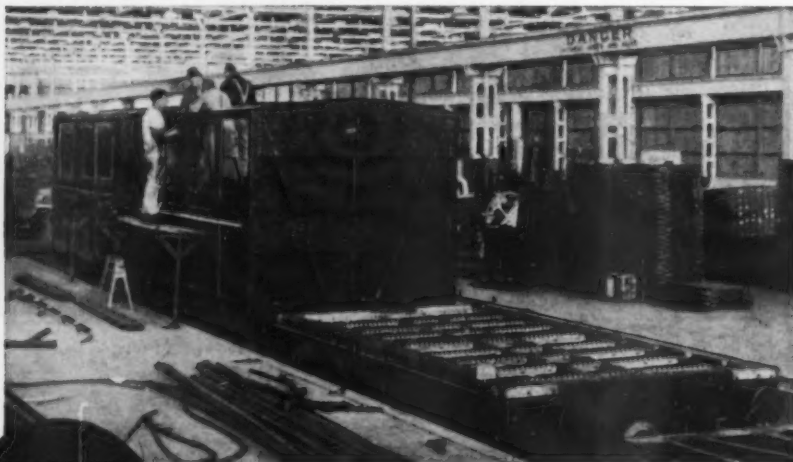


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8 ACRES OF PLANT AND TECHNICAL RESOURCES

**HARVESTER CHIEF'S
NEW APPOINTMENT.**

Mr. R. B. Bradley, Chairman of the Board of Directors of International Harvester Company of Australia Pty. Ltd., who formerly held the dual positions of Managing Director and Chairman of the Board, has been appointed to the position of Director-General of the International Harvester Company's European Operations with headquarters at the Company's General Offices in Chicago.

Mr. Bradley will also continue as Chairman of the Board of the International Harvester Company of Australia Pty. Ltd.

In 1939 he came to Australia to take up the position of Assistant Managing Director of International Harvester Company of Australia Pty. Ltd. In 1940 he was appointed Managing Director and Chairman of the Board in 1946.

Throughout the period of his administrative appointments in Australia, Mr. Bradley has applied his wide overseas experience in power farming with tireless energy. This has resulted in the development and manufacture in the Company's Geelong Works of much new and improved power equipment to increase agricultural production. It has resulted also in the rapid expansion of the Company's manufacturing facilities, including the new tractor works at Geelong, which is now operating in full gear and producing over 300 tractors each month. This factory is also engaged in the production of complete power units and engines for industrial application, and will assist in the manufacture of three popular sizes of motor trucks.

Mr. Bradley said that his company had made rapid progress in recent years and was confident that this progress would continue. A member of Rotary and of the Athenaeum Clubs, Mr. Bradley, has always taken a keen interest in public affairs.

**THE ROPE AND
CORDAGE INDUSTRY.**

This industry has gone ahead steadily in the face of wartime demand and growing post-war needs. At June 30, 1948, there were 2660 persons (1726 males) gainfully employed in the industry, who drew in wages for the year a round figure of £826,000. The gross value at the factory of their output for the twelve months was £3,688,000.

The ratio per cent. of wages to the value of production was 5.67 per cent., as compared with 47.28 per cent. in 1938-39.

Wages rates increased by 125 per cent. since 1938-39, but the value of production per person increased only by 85 per cent.

The articles produced were chiefly 48,240 tons of rope, 20,100 tons of binder twine, and 28,214 tons of string.

Exports for the year amounted to £87,476. Imports were valued at £165,445.

Carbon in Electrical Engineering

Unique properties of refractories and good conductivity have led to the production of widely contrasting qualities

The electrical industry has from the first found carbon indispensable and from time to time new or improved forms and qualities have made valuable contributions to technical progress in this field. It will be recalled that the electric arc was first produced experimentally by Davy, who, in 1812, used a powerful battery with two pieces of charcoal as the electrodes. Direct current is still almost invariably employed for this purpose because a continuously positive electrode, which dissipates substantially more energy than the negative, is required.

THE modern high-intensity positive lighting carbon is a shell or cylinder of pure carbon containing a core of rare earth salts, principally those of cerium.

The intense heat of the arc converts these compounds into carbides, which have a vapourising point much higher than that of carbon itself. The negative carbon, which does not act as a light source, is a plain carbon shell which is usually smaller in diameter than the positive. It has a comparatively small core which centralises the arc stream. A far greater proportion of the usable light emanates from the crater which forms at the end of the positive carbon than from the arc between the two carbons. The crater is a small circular light source of high brightness and so it is particularly suitable for the optical requirements of cinematograph projection lamps and studio spotlights and for searchlights. In a typical cinematograph lamp a carbon 7mm. in diameter, which takes 50 amperes, produces a luminous intensity of 750 candles a square millimetre. This high light output is associated with a colour temperature of 6,000 deg. K.

The high current densities used in modern arcs have made it necessary to protect the whole length of the carbon from the heating effects of the current passing through it. For this purpose it is generally sufficient to provide a copper coating; intimate contact with the carbon is ensured by electro-deposition of the copper. The metal itself does not enter the arc zone but melts away in advance of the crater, leaving approximately half-an-inch of carbon exposed.

For the more exacting requirements encountered in modern film studios still greater light output is required and 16mm. carbons must operate at currents up to 300 amperes, which make the use of copper-plated carbons impracticable. A further complication is the need to rotate the carbons about their axes so that the crater maintains a regular contour giving a steady and even distribution of light. Many of the latest designs of high-current arcs incorporate recently patented heavy duty water-cooled contacts, which overcome these difficulties by feeding in the current less than an inch away from the crater of the rotating carbon. In the maker's lighting carbon laboratory, water-cooled jaws have been successfully used in research to feed over 1,000 amperes into a 16mm. rotating positive carbon of an experimental type.

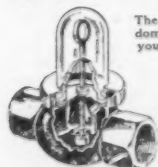
Lighting carbons of special grades and compositions are also used in lithography, process engraving and the testing of paint and dyes for durability against fading. Hospitals and clinics employ arc carbons as a source of light for actino-ray therapy. These qualities are usually cored with the salts of metals such as iron, nickel, strontium or tungsten which control the emission of ultra-violet light of different values in a variety of characteristic bands. The light in this instance is derived from the highly luminous arc stream. Yet other types of carbon are found suitable for microscopy and spectroscopy.

As long as 50 years ago engineers were making attempts to apply the intense heat of the carbon arc to the welding of metals. Little success was encountered in this field, however, until methods were devised to maintain a stable arc. With the advent of a satisfactory system, automatic carbon arc welding with magnetically controlled arcs of constant length rapidly became an established process. The quality of the welds made by carbon arc hand welding has also improved immensely with the introduction of modern equipment which incorporates a stabilising coil and joints much superior to the earlier efforts are now obtained. Experience has shown, however, that it is necessary to use metal filler rods coated with suitable fluxes when the

strength ductility and machinability of the weld metal are of major importance. Joints made by means of the carbon arc without the aid of a flux are less homogeneous and, since molten iron readily absorbs carbon, welds on steel tend to be hard and brittle. At the same time the carbon arc process has several important advantages where the quality of the weld is a secondary consideration and no great stress is to be imposed on the joint, while it is highly attractive because of its low cost compared with other methods of fusion welding. In an automatic carbon arc welding machine, says P. E. Lyddon, writing in "The Times Review of Industry," the consumption of carbon electrodes is of the order of 1ft. to 2ft. an

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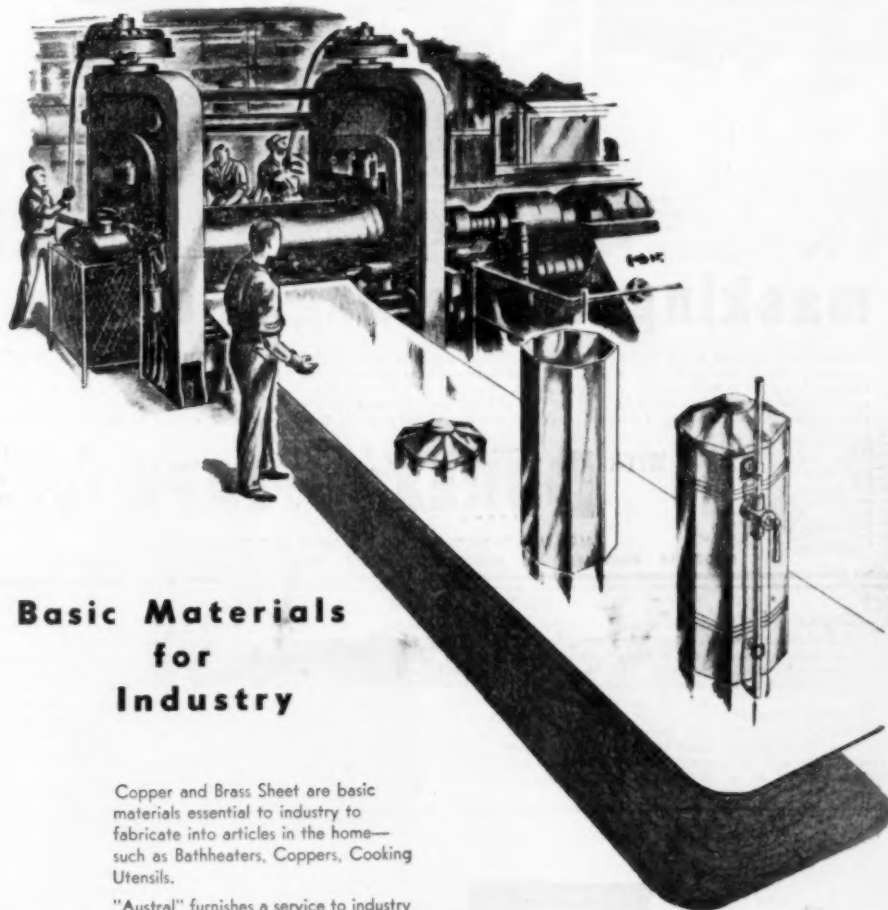
hour, whereas for the same work carried out by metallic arc welding 70ft. of coated wire would be required. Metallic arc welding with bare wire most nearly approaches the low cost of the carbon arc welding with an uncoated filler rod and may be applied to similar work but in general the quality of the joint is inferior because of the greater extent to which the molten metal tends to be subject to contamination from the atmosphere.

Carbon arc welding is autogenous and the heat is so concentrated that in automatic welding closely butted joints as thick as $\frac{1}{2}$ in. are easily penetrated and welded right through. If steps are taken to ensure a reasonably close fit in the parts to be joined, it is thus possible to avoid the expense of beveling the edges of the plate to form a channel in which the electrode deposits metal. For welding thin sheet metal of the order of 20 to 28 s.w.g. an added advantage is that the molten metal under a carbon arc is more fluid and the heat more localised; the work can be done faster and there is less distortion of the sheet than with flame welding. Carbon arc welding is extensively applied in the fabrication of oil drums, particularly on side seams and dished ends, tubing, refrigerator bodies, and gas meters. Hand welding is carried out at a speed of about 18 in./min. on sheet of thin gauge and is applied to stainless and alloy steels and non-ferrous metals such as brass and copper as well as to mild steel. The choice of the correct flux for the particular application is, of course, essential in the welding of special materials.

The voltage of the arc is about 20 to 30, and the polarity is of great importance. The work should be connected to the positive pole of the welding plant to prevent an excess of carbon from being carried over into the weld; the positive terminal of an arc is hotter than the negative and the adoption of an incorrect polarity would allow the greater heat of the positive to be released at the carbon and thus cause a more rapid rate of burning. Direct current is usually regarded as essential for carbon arc welding but recently apparatus has been developed which makes it possible for alternating current to be used. This equipment is used with a normal welding transformer and takes the form of a spark gap oscillator which superimposes a high voltage high-frequency current on the normal low voltage welding current. An ionized path is thus provided between the carbon and the workpiece which enables a stable arc to be maintained at relatively low current settings, and the arc to be struck without the carbon ever touching the work.

A.c. can also be used for the type of welding in which the arc is struck between two cored carbons, clamped at an angle of about 30 deg. to each other, instead of between the carbon and the work, while the arc is made to play on the welding seam. This method of operation does not produce such

(Turn to page 36.)



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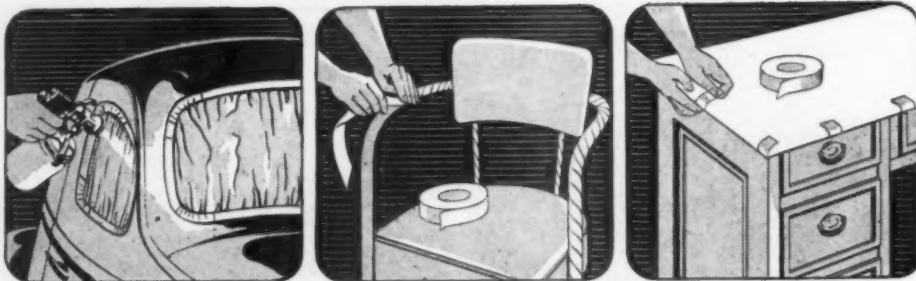
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(Continued from page 34.)
an intense heat in the work as the orthodox system but it is more versatile and can frequently be used with advantage as a substitute for the gas blowpipe.

An electrode of quite different character is the anode of the thermionic valve. The rare combination of electrical conductivity and extreme refractoriness, which is a

characteristic of carbon and makes it specially suitable for lighting and welding arcs, is an essential property but it has, in addition, several further advantages for the special requirements of a valve anode. It is relatively inexpensive and more robust sections can be used than would be economic with molybdenum, which is an alternative material in some types of

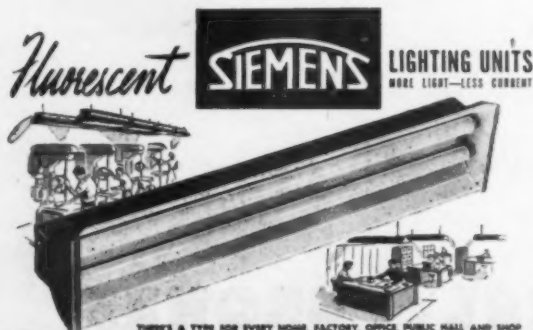
valves. Secondary emission from carbon is lower and makes possible higher anode potentials. The current loading can be higher as the black body radiation is naturally favourable to this condition. Graphite of the highest purity and of a structure which facilitates degassing during the assembly of the valve has been developed for anodes and the intricate shapes

often required call for special skill in machining. The adoption of carbon anodes in mercury arc rectifiers for traction and industrial equipment had already made substantial progress some time before the war, and the subsequent scarcity of molybdenum quickly led to their substitution in valves on a large scale.

DIRECT CONTACT EFFECTS

In all the applications described current flows across a substantial gap to reach the carbon producing thereby the heat and light required, or in thermionic valves permitting some control of the current to be interposed in its path. When current flows from one carbon surface to another in direct contact with it, effects are observed which have been the impulse for the manufacture of quite a different class of product. Carbon-to-carbon contact resistance is extraordinarily sensitive to variations in mechanical pressure and the relationship is approximately linear over a range which is of great importance in connection with tele-

(Turn to page 39.)



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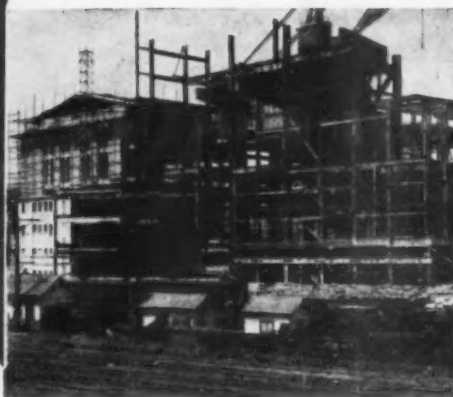
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The Sydney County Council's £30,000,000 expansion plan is going rapidly ahead

Under construction at Pyrmont is the Sydney County Council's new 200,000 kilowatt Power Station, to be known as Pyrmont "B." It will house four 50,000 kilowatt generators, the first of which will be in operation by June next year.

Additionally, another 50,000 kilowatt generator is to be installed at Bunnerong and is expected to be in operation in 1952.

Nor is that all. Plans for a new 300,000 kilowatt station at Lugarno (George's River) are going actively ahead. This means that the Power Stations of the Sydney County Council will have a combined capacity of 875,000 kilowatts.

The Sydney County Council believes that existing problems of electricity supply can be solved only by practical action—by the installation of more and more generating equipment.

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(Continued from page 38.)

phone-microphones and the whole field of the transmission of sound. The pressure of the sound waves impinging on the diaphragm of a microphone is transmitted to a small quantity of carbon granules through which the current from a carbon electrode passes. The total resistance formed by the many contacts made by the granules one with another responds precisely to the fluctuating sound pressure which thus produces an electrical effect—that is, fluctuations of current which can be amplified and finally reproduced electromagnetically as sound at the listener's end. The remarkable degree of fidelity of reproduction exhibited is continued indefinitely. By reason of the chemical inertness of carbon no surface film exists to upset the contact resistance and local heating by the current at the points of contact has no harmful effect on this material.

The pressure-sensitive character of carbon-to-carbon contact resistance which proved to be the key to the telephone has been adapted for other purposes where the pressure is applied mechanically, as in the carbon plate rheostat with a hand screw which has been a familiar piece of laboratory equipment for many years.

AUTOMATIC REGULATORS

Fairly recently pressure applied electro-magnetically has been employed in various ways to automatic regulating devices. This advance has been made possible by the successful production of thin flat carbon discs or rings which, when assembled in a pile, enable many individual contacts and consequently a high maximum resistance to be obtained in a short overall length, as the resistance of the carbon itself is relatively negligible. Over the range usually required in such apparatus the resistance-pressure relationship is hyperbolic. A graph for a typical pile, shows that a high ratio of maximum to minimum resistance is possible and therefore indicates the value of the principle for the regulation of current or voltage. The current energising the electromagnet which applies pressure to the resistance pile is derived from the voltage to be controlled. In the voltage regulator for a generator the pile is in series with the exciting current while it is in series with the load in the regulation of the voltage from supply terminals. Various arrangements for supporting or enclosing the pile have been developed. They pay special regard to the necessity for the rapid dissipation of heat and of mechanical freedom for the contact pressure to act on adjacent rings throughout the pile so that they can respond sensitively to changes in the applied force. This latter requirement is of particular importance at low operating pressures.

In carbon pile resistances the heat is dispersed throughout the whole of the material whereas in a variable wire-wound resistance only a part is active at one time.

The system also has advantages over regulators which depend for their operation on the continuous switching of resistance in and out of the control circuit by means of vibrating contacts. Such mechanisms are liable to suffer from burning and they need periodic adjustment while their intermittent action is a source of radio interference. For this and other reasons the smoothly and infinitely variable carbon pile resistance is to be preferred for the automatic voltage regulators on aircraft generators. Other well-established applications are in the voltage regulation of train-lighting generators and in the starting and speed control of motors fitted in sewing machines and similar appliances.

In a further range of electrical products the self-lubricating property of carbon is most valuable. For the collection of current from moving surfaces, as in the slip rings and commutators of electrical machinery, a great number of different grades of carbon to meet a variety of operating conditions has been produced. On the one hand are the soft, natural-graphite brushes intended to collect current at surface speeds which may attain 15,000ft./min. fitted on slip rings of turbo alternators, and, in contrast, the comparatively hard and tough grades needed for the severe mechanical conditions on traction motors. The technical advances in this field in recent years have been mainly in the selection and further development of grades intended to overcome difficulties associated with certain types of machines or operating conditions, for example, to give stable commutation on continuously loaded d.c. generators of large output, and to be suitable for operation in aircraft at high altitude.

A remarkable extension of the use of carbon for current collection on trolley buses has taken place in the past few years. Experience early demonstrated that the old metal trolley wheel collector of the tramcar easily became derailed from the overhead wire unless the superior manoeuvrability of the trolley bus was largely sacrificed. For this reason sliding metal skids were first tried but proved far from satisfactory because of excessive wear of the wire in spite of frequent lubrication and later on account of the radio interference caused by arcing and sparking. It was a natural step to insert a graphite lubricating pad in the metal rubbing surface, but it was finally found that the best practice is to provide a complete sliding surface of carbon by inserting in the metal shoe a short length of extremely tough and dense extruded carbon. This quality can withstand the mechanical conditions and yet without lubrication reduces the rate of wear of the overhead wire to an enormous extent and incidentally overcomes the other disadvantages of metal to metal current collection.

The adoption of carbon trolley shoe inserts on most British and foreign trolley-bus systems has led to a number of changes in the design of overhead fittings to mini-

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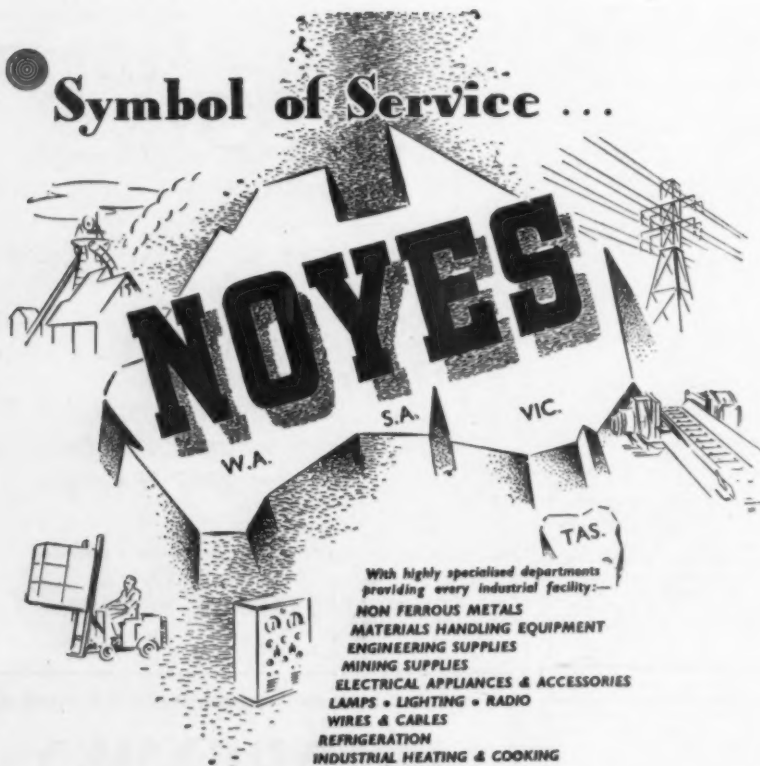
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Pittown Brick Works, Cotter Road, Pittown—Bricks.

G.C.G. Engineering & Art Metal Works, 9a Alexander Street, Crows Nest—Mechanical Engineering.

Planet Ventilation Co., 3 Parramatta Road, Annandale—Sheet Metal Working.

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C. D. Hillier, 31 Wellington Street, Arncliffe—Toys.

London Cabinet Co., 491 Willoughby Road, Willoughby—Furniture and Cabinetmaking.

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(Turn to page 42.)

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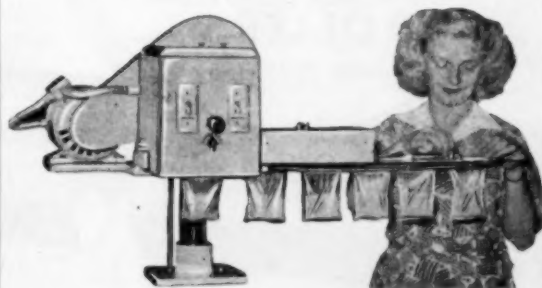
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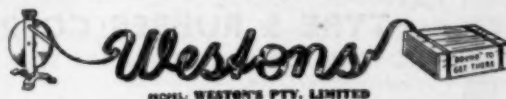
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(Continued from page 40.)

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Callaghan, J. J., 315 Bell Street, Preston—Engineering.

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Martin, G. E., 21 Young Street, Leongatha—Sheet Metal.

Boyles, A., Contingent Street, Trafalgar—Sheet Metal.

Tame, A. E., Toolern Vale Road, Diggers Rest—Wire Products.

Shallcross, R., rear 32 Atherton Road, Oakleigh—Plumbers' Brassware.

Stylecraft Jewellery Pty. Ltd., 1-7 Anchor Place, Windsor—Jewellery.

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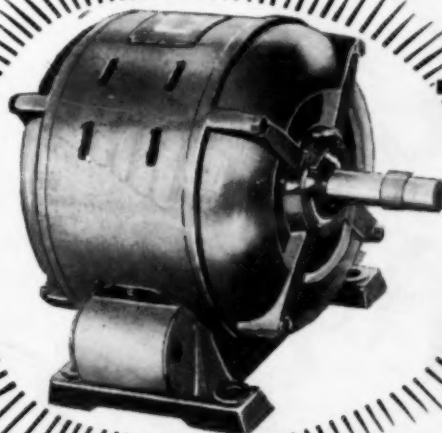
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(Turn to page 44.)

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QLD.: K. H. Dora, 153 Edward Street, Brisbane.

TAS.: Electrical and Engineering Supplies Pty. Ltd., 35 St. John Street, Launceston.



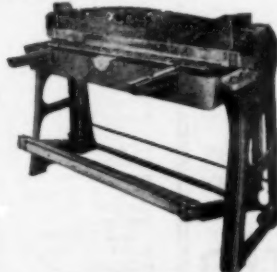
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This is a simple, robust treadle operated Guillotine Shearing Machine fitted with 2 alloy steel blades and designed to cut sheets up to 48in. in width x 18 Swg. Mild Steel.

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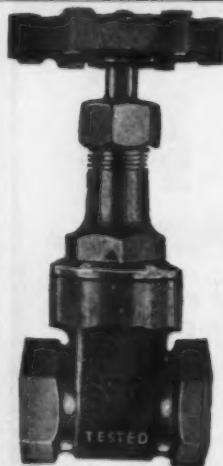
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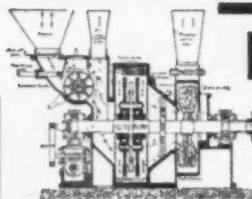
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For grinding, separating and transporting powdered materials. Deliver a product of absolutely uniform fineness. Specially designed for pulverising earths, clays, pigments, barytes, ochres, colours, kaolin lime, precipitated colours, coal, etc.

This machine, shown above, is made in two sizes and fitted with hinged hammers. It is frequently used for pulverised coal firing of small metallurgical furnaces and kilns and for grinding such materials as chalk, shale and gypsum to a fineness up to 200 mesh.

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(Continued from page 42.)

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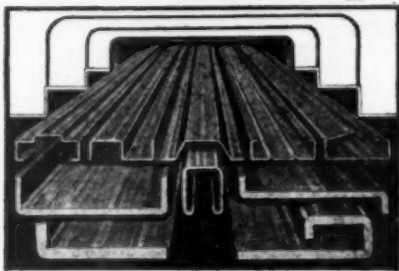
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(Turn to page 47.)

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Mixing valve for hot water. Only 2 plumbing connections.



**10 PEOPLE CAN WASH AT ONE
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- Bradley is new, durable and easily cleaned.
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Interchangeable Steel Branding Sets for parts numbering, etc., available in standard sizes of type from $\frac{1}{8}$ in. to $\frac{1}{2}$ in. Designed for roller, press or hand operation.

Steel Branding Stamps of all descriptions made to suit individual requirements.

We are Manufacturers and Importers of High-grade Marking Stamps and Equipment.

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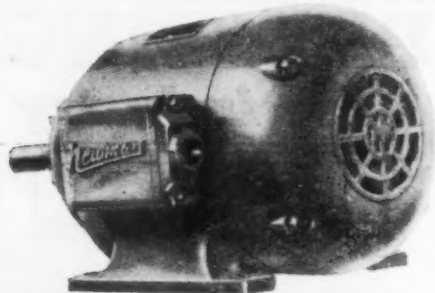
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POWDERED METALS

(Continued from page 44.)

Oakleigh, sawmill proprietors.
Capital: £5,000. Subscribers: H. E. Tisher, G. A. Travers, B. J. Jackson, E. A. W. Roberts, G. Rose.

BASIC WAGE INCREASES.

From the first pay period in May, basic wage rates in the capital cities of Australia will be: Sydney, £6/18/- (3/- rise); Melbourne, £6/17/- (3/- rise); Brisbane, £6/9/- (2/- rise); Adelaide, £6/11/- (2/- rise); Perth, £6/13/- (2/- rise); and Hobart, £6/15/- (unchanged). These new rises mean that the basic wage has been increased by 24/- per week in the last three years and by 56/- per week, or 68.2 per cent, since 1939. It is estimated in expert circles that the increase will add £20 million a year to the national pay-roll cheque, bringing it to upwards of 1970 million annually.

FACTORIES "FOR HIRE."

Slough Estates, which organisation constructs factories and leases them to industries whose manufacturing operations are related one to the other, have called tenders for four 11,000-square feet factories on the Ballarat Common. Announcing this development the Premier of Victoria, Mr. Hollway, expressed the hope that the new factories may be the start of a new and thriving suburb of Ballarat. "I am satisfied," he added, "that other industrialists will follow the example of Slough Estates and create enterprises on the Common, under plans laid down by the State Development Commission."

This is an extremely interesting departure and its subsequent development will be watched with interest.

TOOTH PASTE COMPANY EXPANDING.

Whitehall Pharmacal Co., makers of Kolynos toothpaste, is contemplating expansion of its Australian organisation.

Mr. Sherwood Waldron, assistant to the president of the company in the United States, said in Melbourne recently that he was visiting Australia to examine the expansion prospects. Funds for the initial developments in mind would probably not be new dollar capital, but would



ANNOUNCING A NEW ARRIVAL...

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Specialty processed to withstand temperatures up to 180°C. Easily suitable for wiring stoves, ranges, switchboards, arc-lighting equipment, etc.

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ASBESTOS INSULATED CABLES, FLEXIBLES

ROCKBESTOS FLEXIBLE HEATER CORDS... recommended for all electrical home and shop appliances where ordinary rubber flex shows deterioration from heat.

ROCKBESTOS A.V.C. CABLES... intended for use at temperatures not exceeding 180°C. Its high dielectric strength—consists of an insulation in which Varnished Combric is incorporated between two layers of felled Asbestos.

Cable Makers Australia Pty. Ltd. proudly announce a new arrival—ROCKBESTOS Cables and Flexibles. Made under exclusive American patent, ROCKBESTOS Cables and Flexibles are thoroughly impregnated with heat- and moisture-proof cements—are impervious to heat, oil, grease, age or vibration—and are specially designed for effective application wherever these conditions are encountered. Supplies are available NOW for immediate delivery—so specify ROCKBESTOS Asbestos Insulated Cables and Flexibles for all future installations wherever high temperature conditions are likely to be experienced...

*Manufactured in Australia by Cable Makers Australia Pty. Ltd. under exclusive licence from the Rockbestos Products Corporation, Connecticut, U.S.A., and approved by the State Electricity Commission of Victoria and the Sydney County Council.

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be taken from accumulated earnings here.

The organisation's 150 Australian employees might be doubled, or even trebled, in the process. The new jobs would go almost exclusively to Australians. Only key technicians would be brought from America.

JOINS STANDARD TELEPHONES BOARD.

LT-Gen. V. A. H. Sturdee, retiring Chief of the Australian General Staff, has accepted an invitation to join the board of directors of Standard Telephones and Cables Pty. Ltd.

AUSTRALIAN INSTITUTE OF MANAGEMENT.

The following have been elected to the council of the Australian Institute of Management, N.S.W. Branch: Messrs. K. S. Brown, R. W. Harmon, W. E. Hartman, C. O. Neale, R. Orr, R. W. Savage, W. Scott, and J. N. Walker.



Handling is cleaner and there is less chance of confusing colours, types, and lots because the baskets are of open mesh construction which permits all foreign matter and discarded tags to fall through to the floor.

Company Gains Five Ways With Collapsible Basket Pallets

(1) Weighing operations in the winding room require one man instead of four. (2) Storage area handling requires only three people instead of twelve. (3) Handling operations are cleaner, and there is less chance of confusing the many colours, lots, and types of yarn. (4) Taking a complete physical inventory of some 400,000 pounds of yarn requires only six people on a Saturday and Sunday; previously, this took fifteen people a solid week during a shutdown. (5) Checking of the perpetual inventory to be sure all the yarn required for a particular run is on hand can be done in a few hours at most, sometimes in a matter of minutes.

SUBSTITUTION of collapsible wire mesh basket pallets for the traditional canvas baskets in yarn handling operations has brought the five distinct advantages named above.

In general, these advantages are the result of two factors: The containers we are now using, writes

James F. McLaughlin in "Factory Management and Maintenance", have a capacity of about 530 pounds, while the canvas baskets have a capacity of roughly 50 pounds; and the new containers can be handled by fork truck or hand pallet truck, while baskets were handled manually.

THE OLD WAY.

With the baskets, a spool of yarn was removed from the winding machine and placed in a basket, which then had to be carried or dragged across the floor to the scale. After the baskets had been weighed, they were loaded on a dolly and pushed to a chain conveyor which carried them down to a loading platform where they were stacked manually on a truck. They were then trucked to the unloading platform of the axminster mill, where they were placed on large platform trucks to be carried to the yarn storage room. Once

in the storage area, the baskets had to be unloaded by hand into fixed, wooden bins.

As yarn was required, it had to be removed from the bins, carried or dragged to the scales, weighed, and then placed in the racks from which the setting machine operators took spools as needed.

To take a physical inventory, all yarn had to be removed from the bins, weighed, and returned to bins. Because there was no way of short-cutting this process for checks on particular items, the perpetual inventory had to be relied on except in extreme cases.

Lint, dirt, and obsolete identification tags accumulated in the bottom of the baskets. This made later cleaning operations more difficult—and yarn sometimes found its way into the wrong bin.

THE NEW WAY.

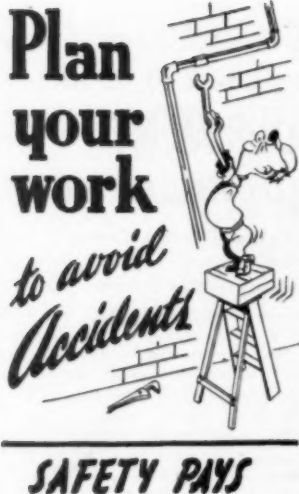
With the wire-mesh basket pallet—
(Turn to page 69.)



Weighing is simplified by setting tare to account for weight of pallet truck and empty container, which is uniform.



Storage uses vertical space and requires three men, instead of the previous twelve.



Accident Prevention

Comprehensive Scheme in Operation by Australian Gas Light Company

Unquestionably one of the major worries of the industrialist of to-day is the accident, the accident which means either light, serious, or fatal injury to the worker; resulting in absenteeism; the slowing down of the tempo of production; and which spreads a spirit of disquiet, with consequent lowering of morale, throughout the entire undertaking.

Modern humane and efficient management, accordingly, regards accident prevention as one of its most vital responsibilities, demanding unceasing vigilance; the constant seeking after new and better methods of accident prevention; and the systematic analysis of contributing causes, with a view not only to the material reduction of accidents, but ultimately to their complete elimination.

RECENT years have seen a world-wide effort towards the prevention of the industrial accident. This effort, of course, has been selective in character. For, obviously, differing industries have widely differing hazards, calling for widely differing preventive action. All industries, however, have one thing in common. It is this. The accident danger is present throughout the whole of every working day, looming like a spectre over every enterprise, and calling aloud for the putting forth of the most earnest effort for its elimination.

Scientific investigation of the accident problem has revealed that, basically, accident-causation falls into two main categories—(1) those which are subject to supervisory regulation; and (2) those emanating from mechanical or material hazards, the two categories being designated "Supervisory" and "Physical". Experience over a wide field has proved that, by and large, virtually all accidents are

ascribable to one or other of these causes.

The following table, which represents years of research, outlines an admirable method of accident-analysis:—



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BE CAREFUL!**

BASIC ACCIDENT CAUSES.

1. Faulty Instruction.
 - (a) None.
 - (b) Not in force.
 - (c) Incomplete.
 - (d) Erroneous.

2. Inability of Employee.

- (a) Inexperience.
- (b) Unskilled.
- (c) Ignorant.
- (d) Poor judgment.

3. Poor Discipline.

- (a) Disobedience to Rules.
- (b) Interference by others.
- (c) Horse-play.

4. Lack of Concentration.

- (a) Attention distracted.
- (b) Inattention.

5. Unsafe Practices.

- (a) Chance taking.
- (b) Short cuts.
- (c) Undue haste.

6. Mentally Unfit.

- (a) Sluggish or fatigued.
- (b) Violent temper.
- (c) Excitability.

7. Physically Unfit.

- (a) Defective.
- (b) Fatigued.
- (c) Weak.

Physical.

1. Physical Hazards, including Mechanical, Electrical, Steam and Chemical Conditions.

- (a) Ineffectively guarded.
- (b) Unguarded.





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Old. Rep.: T. H. Martin & Co., Wilson House, 35 Charlotte St., Bris.
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2. Poor Housekeeping.
 - (a) Improperly piled or stored material.
 - (b) Congested.
3. Defective Equipment.
 - (a) Miscellaneous material and equipment.
 - (b) Tools.
 - (c) Machines.
4. Unsafe Building Conditions.
 - (a) Fire protection.
 - (b) Exits.
 - (c) Floors.
- (d) Openings.
- (e) Miscellaneous.
5. Improper Working Conditions.
 - (a) Ventilation.
 - (b) Sanitation.
 - (c) Light.
6. Improper Planning.
 - (a) Layout of operation.
 - (b) Layout of machinery.
 - (c) Unsafe processes.
7. Unsuitable Dress or Clothing.
 - (a) No goggles, gloves, masks, etc.

- (b) Unsuitable long sleeves, high heels, etc.

It is being demonstrated increasingly that if the accident question is studied in the light of the facts outlined in this table and if the hazards enumerated are guarded against zealously, accidents can be reduced to negligible numbers.

Experience shows that the overwhelming majority of accidents are due to the mis-use of hand tools, to the careless, indeed, the fre-

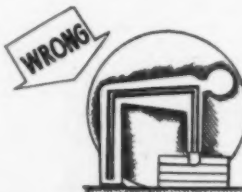
quently lazy, use of tools for purposes other than those for which they were designed and produced. Supervisory officers have discovered that one of their most important every-day tasks is watching out for this form of carelessness and its immediate scotching. Theirs, too, is the responsibility of seeing to it that all tools are safe to use; that handles are sound and strong; that they fit tightly; that wooden handles are fixed firmly to (Turn to page 52.)

KEEP THINGS



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TW.340	300 to 1,700	30 to 140	22 1/2"	1/2"
TW.1200	200 to 1,200	20 to 100	20 1/2"	1/2"
TW.1700	40 to 340	5 to 30	19 1/2"	1/2"
TW.2700	20 to 100	2 to 8	11 1/2"	5/8"

FEATURES

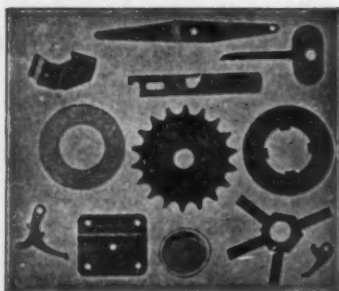
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(Continued from page 50.)

such implements as files, and that ultra-sharp cutting edges are protected adequately.

Badly stacked material is another potential source of serious injury to workers, heavy objects falling from a height being capable of inflicting grievous harm. And not only may material be badly stacked; it may also be badly located. What, for example, could be more conducive to accidents than piles of materials near lifts, near stair-wells, or on projecting ledges? Science, plus care, in this section of activities can reduce hazards to a virtual minimum.

It is to be feared that falls figure prominently in the accident list, falls either from heights or caused by stumbling on floors. Obviously, the preventive action in this regard would be along the lines of ensuring that ladders, etc., are strong and in perfect order, and that they are used only by those young enough, agile enough, and strong enough to do so with safety. Floor-stumbling can be overcome largely by the laying down of the flooring material best suited to meet the requirements of specific industries; by the keeping of floors of all types dry, clean, and free from any type of object over which a worker is likely to trip.

Such hazards as may be associated with mechanical handling equipment are, generally speaking, so well emphasised by their makers at the time of installation that the alert, intelligent worker—which type is usually assigned to this class of operation—is capable of guarding against them effectively. Here, too, nevertheless, the supervisor can see that every possible precaution is taken against carelessness or incorrect operational methods.

In the final analysis, however, the measure of success attained in all accident-prevention schemes rests on the shoulders of the workers themselves.

Enthusiasm is the basic essential. For from this will derive that alertness, that watchfulness, that care, and that interest which are the indispensable ingredients of "safety consciousness".

This enthusiasm is aroused and kept alive in different ways by different undertakings. Perhaps no more impressive example could be cited than the accident-prevention scheme in operation at the works and offices of the Australian Gas Light Company, of Sydney.

It must be emphasised at the outset that the general principles on which the company's Accident Prevention Scheme is based are (a) the clear recognition that the responsibility for implementing the safety policy in the daily operations of the company rests with supervisory officers who exercise authority over the work of employees; and (b) the provision of an advisory service to these officers on all safety matters by the appointment of a Safety Engineer in the Personnel Department, and the operation of an Accident Prevention Committee with employee representation in each major unit of the company.

In order to ensure continuous interest and enthusiasm in the plan, the Accident Prevention Com-

(Turn to page 54.)

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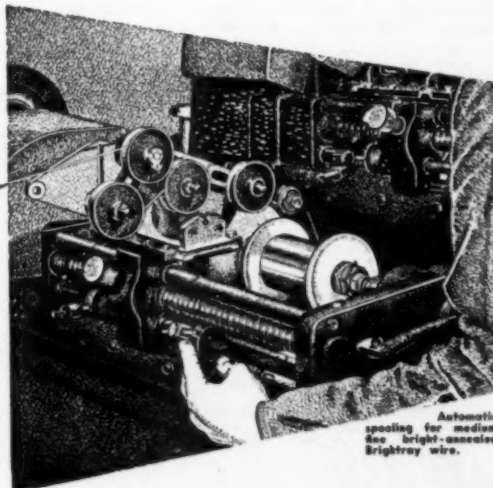
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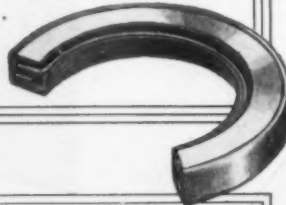
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(Continued from page 52.)
mittee meets monthly; discusses such accidents as may have occurred within specific units; and considers suggestions relating to safety which have emanated from any and every quarter.

The object underlying the whole scheme is, of course, the making of every employee "safety conscious", so that throughout the whole working period, each thinks "safety", plans "safety" and acts "safety". For just as each accident is, in the main, individual, so must its prevention be individual.

This arousing of the "safety consciousness" is effected by the Australian Gas Light Company per medium of education. This education takes the form of special articles in journals circulating among employees; lectures on accident prevention; the screening of safety films; and the distribution of safety posters. At all training courses or groups within the company, moreover, the importance of safety is stressed by all speakers and in all literature submitted for study.

It is recognised universally that as an education medium, the poster holds undisputed pride of place. In all cases, however, the message it gives must be clear, crisp, and to the point. Colour can play a vital part. For it stands to reason that a bright, even a vivid, message, is more likely to catch the eye and to hold the attention than one given in dull sombre tones. Variety is also an important consideration. For this reason, the posters should be issued at fairly frequent intervals. Originality, Crispness, Novelty. Each of these must figure prominently on the safety poster.

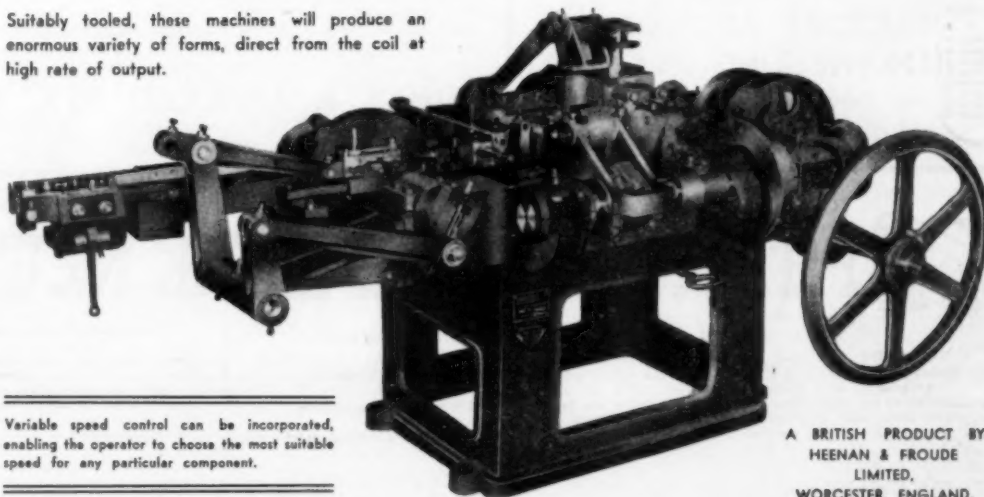
As is evident from the illustrations accompanying this article, the posters issued by the Australian Gas Light Company possess in high measure all these necessary characteristics. Issued monthly, these safety posters, which are produced entirely within the enterprise, are generally of a humorous nature and contain either a general safety message or illustrate some "un-safe" practice. They are supplemented with safety matter received from the Road Safety Councils and from the National Safety Council.

It is interesting to record, by the way, that as an additional boost to this form of safety education, the company has conducted competitions on lines similar to the "Give It a Name" contests which have proved themselves popular in many newspapers. Brightly coloured posterettes depicting various phases of "un-safety" are displayed and employees are asked to submit titles. Cash prizes are

(Turn to page 51.)

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PATENT SPECIFICATIONS ACCEPTED

A MAGNETO DISTRIBUTOR.
136,764.—M. G. Chapman, N.S.W.

A distributor for the application of a single cylinder magneto to a twin-cylinder two-stroke internal combustion engine with cranks at 170 deg., comprises a reciprocating head connected to the magneto lead and oscillated

at engine speed and two spaced buttons connected to the spark plugs of the engine and fed with high tension impulses from the distributor head during its oscillation.

DRYING FOODS AND OTHER MATERIALS.

136,763.—E. J. Foster, N.S.W.
Apparatus for the dehydration of foods or the like and the reduction of such to dry powdered form comprises serially connected first and second treatment vessels, a centrifugal blower for directing a stream of heated air upwardly through the vessels, a helical conveyor for delivering fragmented material near the lower end of the vessel, baffles for diverting the heavy particles from the air stream for return to the lower region of the air stream, a screen at the upper end of the vessel for passing the fine particles and rejecting the coarser particles, outlets asso-

ciated with the vessel for extracting the coarser particles therefrom, an outlet duct adapted to receive the fine particles and a filter connected to the duct for separating the fine particles from the air stream.

The coarser particles returning through the outlets to a hopper may be delivered by a helical conveyor into a third treatment vessel for further fragmenting and drying.

DRAG SCOOPS WITH POSITIVE ACTING MECHANISM.

136,756.—G. E. Thompson, N.S.W.

To minimize the number of trip controls and provide positively acting mechanism for scooping, discharging and spreading while travelling in one direction, a scoop, consisting of a V-shaped floor, rear wall and side discs, has rotatably attached side plates, a forked main frame pivoted thereto and tractor coupling,

while a lever adapted to move in a substantially vertical plane has pivotal attachments to a link and side plates; the rotation of discs has limiting means and a transverse earth retaining board is provided. A lever pivotally connected to side plates having arms to engage stop means controlling the rotation of the discs may be provided and a cutting edge may be secured to the part. In a modification a transverse

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(Dowling Patent No. 18857/48)

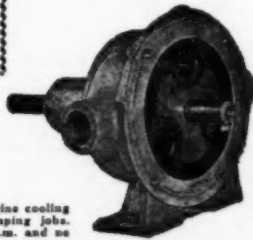
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axle is pivotally mounted in and between side plates to which the levers are connected, the stop means may be secured to the rim of each disc co-acting with arms, and wide skids secured to respective discs may be included.

CAPACITY DISCHARGE WELDING EQUIPMENT.

136,748.—Standard Telephones and
Cables Pty. Ltd., N.S.W.

For welding wires and like light parts a fuse welding equipment of the capacity discharge type includes a pencil like tool, having an electrode capable of being propelled forwards in the tool by screw to adjust for wear and adapted for use in confined spaces or through restricted apertures.

AN AIR AND GAS CLEANER.

136,344.—L. Parer, N.S.W.

A filter comprises a casing with an inlet having mounted therein means for imparting an electrical charge to the foreign particles carried by the gas, mechanical devices which may comprise a screen for separating the larger

particles from the gas and at least one charged screen whereon the lighter particles will be deposited.

FITTING FOR GARDEN RAKE.

136,358.—F. G. Davies, Vle.

For removing leaves from the prongs a strip of metal with holes or slots to receive the prongs is positioned near the cross-bar with means to move the strip along the prongs to a position near their tips. In a modification the spring loaded push rod is replaced by a flat spring with one end secured to the handle.

THE TUFTING OR BUTTONING OF MATTRESSES.

136,357.—E. L. E. Andersen and
D. M. Taylor, N.Z.

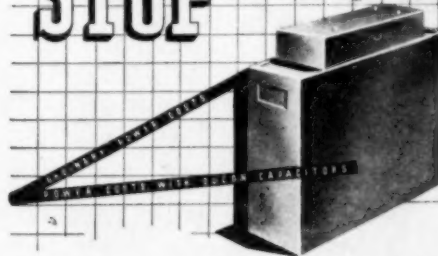
Co-acting members comprising rings and needle-guiding cones are brought together by screws to compress parts of a mattress therebetween. Needle - holding means are reciprocated by cam bars carried by a hand operated rod to pass needles, upon which threads and tufts or buttons are held, through the compressed parts of the mattress so that further tufts may be placed on the opposite side of the compressed part; the threads then being knotted and tied.

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136,371.—Automatic Totalisators
Ltd., N.S.W.

To enable number wheels in all the ticket issuers to be concurrently changed from a central control room, printing arrangements, comprise: a type barrel, a shaft whereon the barrel is keyed, an escapement ratchet wheel, means for drive connecting ratchet wheel to shaft, motor spring for ratchet wheel, an escapement lever in operative association with ratchet wheel, an electro-magnet associated with escapement lever, control switch and circuiting means for energisation of the electro-magnet.

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**MACHINES FOR FOLDING
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136,361.—A. Quina, N.S.W.

A pair of toothed meshing rollers are adapted to fold paper fed between them. Provision is made for rotating the rollers and guide means, prevent the buckling of the folded paper after it leaves the rollers.

**THE ASSEMBLY OF ELECTRIC
MOTORS.**

136,377.—K. R. Ritter, Vic.

Easy assembly and true running of the rotor are attained in an apparatus which comprises a pair of U-shaped brackets, having teeth to support stator which when assembled form a substantially rectangular housing. The spindle runs in bearings which are housed in bosses. To retain the housing parts in assembled position spring rings are inserted into circumferential grooves.

**NEW TYPE SNAP CATCH
FOR SECURING LIDS.**

136,384.—Airzone (1931) Pty. Ltd., N.S.W.

For securing lids in a closed position, a snap catch consists of: a catch member having means to engage a catch pin affixed to the case, a rod securing the catch member to the case, and a spring on the rod to hold the catch member in releasable engagement with the catch pin.

**ATTACHABLE MOP WRINGER
FOR BUCKETS.**

136,387.—F. R. Tozer, W.A.

To enable attachment to any one of a wide variety of sizes of bucket, a base member is provided having clips which may be moved so as to grip the bucket.

COLLAPSIBLE COOKERS.

136,396.—A. Horne and F. Leppik, Vic.

A collapsible box-like cooker of truncated, pyramidal form has a pair of end and side walls detachably joined by their respective engaging edges of rolled channel form. A grate is detachably supported on the lugs above the air vents, and the flanged outwardly and upwardly turned edges of the side walls support cooking utensils or a reversible damper.

**RACE TOTALISATOR ADDING
UNIT.**

136,372.—Automatic Totalisators Ltd., N.S.W.

To provide drive transmission from slipping clutch counter, which by-passes escapements and epicyclics so that plus or minus motions therein exercise no effect on the counter and to also facilitate repairs, an adding unit is comprised of: a counter at least one escapement assembly, working parts support frame, counter drive shaft, escapement assembly drive shaft, an epicyclic gear unit associated with shaft, motor devices through epicyclic gear unit urging escapement drive shaft, to rotate, and means to rotate shaft in consonance with the escapement drive shaft and to restore energy to the motor devices by the epicyclic gear unit.

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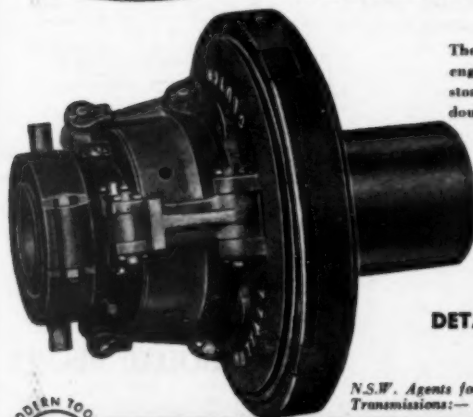
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SEAM PRESSING MACHINE.

136,819.—The British United Shoe
Machinery Co. of Australia Pty.
Ltd., Vic.

A machine for pressing a seam
in a workpiece comprises: a
pressing means, a work support,
a work engaging device, and a
means in housings for imparting
movement to the device. A
method of pressing a seam is also
claimed.

TIMING BOWL CONTROL DEVICE FOR IRRIGATION.

156,887.—R. W. Newton, Vic.

A timing bowl control device
for use in connection with auto-
matic irrigation systems, com-
prises a casing containing a
sleeve member projecting there-
above and secured to the central
part of a diaphragm which may
be raised by the by-passed water
through from an active spray
nozzle, a vertically guided water
receiving bowl, which rests on
top of the sleeve and which has
restricted communication with
the space beneath the diaphragm
and mechanical means tending to
apply upward motion to the bowl
and having an actuating mem-
ber; the arrangement of the
parts is such that so long as by-
passed water is entering the
chamber the bowl will be raised
by water pressure and the valve
actuating member will remain in-
active thereby maintaining a hy-
draulic lock, which is only re-
leased when the supply of by-
passed water is terminated,
thereby permitting the valve
actuating member to descend and
actuate its associated valve.

TRADE MARK APPLICATIONS

95,218. "Edinuls." An emulsi-
fier.—W. Hermon Slade & Com-
pany Pty. Limited, Mandemur
Avenue, Homebush, N.S.W.

85,897. "Joystap." Metal de-
vices for securing ceiling joists to
hanger beams.—Jack Sersic, 24 Ed-
gar Street, West Footscray, Vic.

95,214. "Supertyfon." Signalling
apparatus, especially sound signalling
apparatus.—Kockums Mekan-
iska Verkstads Aktiebolag, 8 St.
Varvsgatan, Malmoe, Sweden.

94,553. "Tractair." Internal
combustion engines having air
compressors associated therewith.
—Tutt, Bryant Pty. Limited,
South Street, Rydalmere, N.S.W.

94,721. A label design showing,
inter alia, the words "Hammick
Engines." Engines and parts
thereof.—Frederick Charles Ham-
mick, 108 Studley Road, Heidel-
berg, Melbourne, Victoria.

94,087. "Simar." Agricultural
machines, particularly rotary ag-
ricultural machines.—Societe In-
dustrielle de Machines Agricoles
Rotatives Simar, 35 Rue de
Lancy, Geneva, Switzerland.

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Fruit", and 133,194, for "Machine
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Accident Prevention

(Continued from page 54.)

given for the best entries, preference
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as convey a "safety" message.

The Australian Gas Light Com-
pany takes justifiable pride in the
fact that its Accident Prevention
Scheme, launched with enthusiasm
by the management and taken up
with a like enthusiasm by the em-
ployees, has achieved outstanding
results. The plan was inaugurated
in December, 1947, and, by 1949,
the total number of working hours
lost as the result of accidents
showed a reduction of 82.2% over
the 1948 figures, and of 43.5% over
those of 1947.

This, indeed, is a splendid
achievement and clearly demon-
strates that science, ingenuity, and
vigilance are performing veritable
miracles in the matter of accident
prevention.

APPOINTED HEAD BREWER.

Mr. R. L. Bond, who has
taken up duty as head brewer at
Springfield Brewery, Adelaide, is
a son of Mr. R. H. Bond, who
retired two years ago from the
position of head brewer of
Tooheys Ltd., Sydney. Mr. R. L.
Bond gained his first brewing
knowledge at Tooheys. After-
wards he was for a term with
Dunedin Brewing Co., in New
Zealand. Later he was for seven
months at Richmond Brewery in
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Bond served in the Middle East
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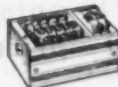
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Tillock & Co. Pty. Ltd., £840/12/11.

Sugar (Req. No. F.16.213). Colonial Sugar Refining Co., £2,073/6/8.

Mustard (Req. No. F.16.219).
Jas. McKenzie & Co. Pty. Ltd., £875/19/10.

Ground Black Pepper (Req. F.16.220). Robt. Harper & Co. Ltd., £4,420/5/10.

Apricot Pulp (Req. No. F.16.221). Merchants Supply Ltd., £541/8/1.

Plumbing Equipment (Req. No. 1351). Plumbers Supplies Pty. Ltd., £268/3/9.

Various Files (Req. No. 1357).
Intercolonial Boring Co., £225/7/5.

Refills, Fire Extinguishers (Req. No. 1358). Fighting Equipment Pty. Ltd., £255/2/-.

Folding Camp Tables (Req. No. 1360). Hancox & Co., £391/2/6.

Folding Camp Tables (Req. No. 1364). Hancox & Co., £623/18/9.

Low Temperature Grease (Req. No. 382). Shell Co. of Aust., £245/4/2.

Well Glasses, Flint (Req. No. 383). Crown Crystal Glass Pty. Ltd., £283/6/8.

Plug Tobacco (Req. No. 389).
R. Towns & Co. Pty. Ltd., £503/10/-.

Boyle's Anaesthetic Apparatus (C.I.G. (N.S.W.) Pty. Ltd., £274/0/6.

Thermocouple Wire "Chromol" (Req. No. 393). H. B. Selby & Co. Ltd., £282/10/-.

Set of Engine Telegraph Equipment (Req. No. 394). Begg & Greg Pty. Ltd., £405/15/-.

Spares for "Buda" Generating Sets (Req. No. 396). Lawton Industrial Truck Ltd., £1,613/19/6.

Grey Blankets (Req. No. 2672).
John Vicars Pty. Ltd., £37,070/6/3.

Seamen's Serge (Req. No. 2687).
John Vicars & Co. Pty. Ltd., £5,971/17/6.

Cotton, Net Knicker Drawers (Req. No. 2693). Maryborough Knitting Mills (Cuttle) Ltd., £9,503/6/6.

Winter Drawers (Req. No. 2694). Eastaugh Ltd., £985.

Blue Jerseys (Req. No. 2696).
Cosmos Knitting Mills Pty. Ltd., £7,251/6/5.

White Football Jerseys (Req. No. 2697). Bruce Pie Industries Ltd., £333/9/-.

Shoe Lasts (Req. No. 2700). G. N. Raymond Pty. Ltd., £803/14/7.

Dish or Floor Cloths (Req. No. 2701). Melbourne Rope Works, £592/1/8.

Male or Female Caps (Req. No. 2702). Vic. Brookshaw, £349/7/9.

Ottokin Coats (Req. No. 2703).
Ellenberg & Zeltner, £1,337/10/-.

Infants' Long Sleeved Pullovers (Req. No. 2706). Alfa Knitwear Pty. Ltd., £991/8/2.

Ingot (Req. No. 2796). Melbourne Iron & Steel Mills Pty. Ltd., £591/11/3.

Fabricated Steel Columns (Req. No. 2801). A. Challingsworth Pty. Ltd., £220.

Spencer Locating Pins (Req. No. 2803). Robert Bryce & Co. Pty. Ltd., £395/16/8.

Automatic Home Laundries (Req. No. 2804). Levin & Co. Ltd., £658/16/11.

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Forbo Industries, £213/15/-.

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(Turn to page 64.)



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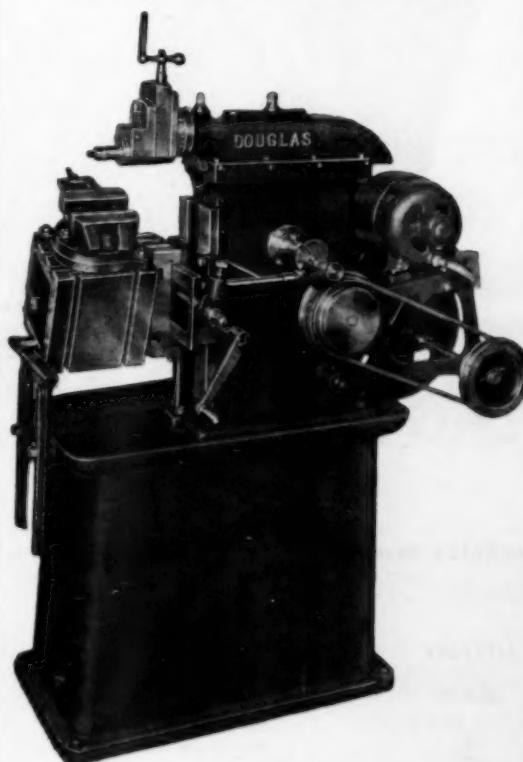
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(Continued from page 62.)

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Children's Wooden Cots (Req. No. 2556). Johnstons Pty. Ltd., £250.

Wood Packing Cases (Req. No. 2567). Preston Timber Co. Pty. Ltd., £662/10/-.

Full-Lift Apparatus (Req. No. 2639). Perrot & Adams Pty. Ltd., £213/15/-.

Leyland Model Tiger OPS. (Req. No. 2640). Leyland Motors Pty. Ltd., £22,600.

Trichlorethylene Degreasing Plant (Req. No. 2643). Imperial Chemical Industries of Australia & N.Z. Ltd., £321/9/9.

Prefabricated Spray Booth (Req. No. 2645). T. O'Connor & Sons Ltd., £659.

Winding Wire (Req. No. 2646). Liverpool Electric Co. Ltd., £375/4/2.

Universal Welding Stands (Req. No. 2647). Electro Mechanical Products, £1,396/2/2.

Degreasing Plant (Req. No. 2649). Imperial Chemical Industries of Australia & N.Z. Ltd., £319/17/7.

D.C. Motor (Req. No. 2651). F. W. Davey & Co., £3,368.

Nash Hytor Vacuum Pump (Req. No. 2652). H. W. J. Anderson Pty. Ltd., £210/10/-.

Soft Annealed Naval Brass Sheets (Req. No. 397). Austral Bronze Co. Pty. Ltd., £775/0/4.

Mattresses (Req. No. 398). Key-sell Bedding Co. Rates.

Electric Soldering Irons, etc. (Req. No. 401). Siemens (Aust.) Pty. Ltd., £261/0/4.

Polished Rice (Req. No. 404). Waters Trading Co. Ltd., £1,436/8/-.

Horse-Hair, Teased (File No. C/4/150/37). H. M. Holbeach, £1,358/8/-.

Formic Acid (File No. C-4/161/43). Harrison, Ramsay Pty. Ltd., £774.

Brown Coal (Cobbles), (File No. C/4/166/123). Gardiner & Warner Pty. Ltd., £1,375.

Levels, Bricklayers' (File No. C/4/171/34). Johnson & Gaston Pty. Ltd., £265/6/8.

Micrometers, English (File No. C/4/171/34). Demco Machinery Co. Pty. Ltd., £116/9/-.

Micrometers, English (File No. C/4/171/34). Motor Parts & Service Ltd., £473/9/8.

Spirit Levels (File No. C-4/171/34). McPhersons Ltd., £116/5/10.

Lines for Bricklayers (File No. C/4/171/34). G.A.W. Hardware Co., £185/15/10.

Baskets, Frying (File No. C-4/175/126). G. W. Rowley Pty. Ltd., £78.

Boards, Chopping, Small (File No. C/4/175/137). Myer Emporium Ltd., £50/5/4.

Saucepans, Iron (File No. C-4/175/137). T. S. Nettlefold & Sons Pty. Ltd., £64/19/-.

Resin Bonded Plywood (File No. C/4/182/98). Gibbs, Bright & Co., £1,635/7/6.

Hard Soap (File No. C/4/183/24). G. W. Pennell, £160.

Cornbags (File No. C/4/207/3). William Crosby & Co. Pty. Ltd., £21,300.

(Turn to page 67.)

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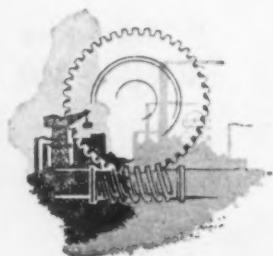
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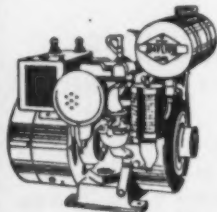
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(Continued from page 64.)

Cases, Brief, Signallers' (File No. C.4/208/7). John Withers & Son Pty. Ltd., £427/12/9.

Bobs, Felt, White (File No. C.4/250/78). Felt & Textiles of Aust. Ltd., £1,703/19/-.

Jackets, Service Dress (File No. C.4/251/58). Golden Glory Clothing Co., £1,810.

Trousers, Service Dress (File No. C.4/251/59). H. G. Bridger, £1,354/7/6.

Trousers, Battle Dress (File No. C.4/252/4). Chief Clothing Co. Pty. Ltd., £15,416/13/4.

Blouses, Battle Dress (File No. C.4/252/5). H. R. Hayman Pty. Ltd., £22,018/10/-.

Master Hubs for Badges and Buttons (File No. C.4/253/38). G. F. Bainbridge, £683/19/6.

Hooks, Brass, Belt (File No. C.4/253/52). A. Jones & Co., £1,252/15/7.

Jackets, Cardigan (File No. C.4/255/15). Australian Knitting Mills Ltd., £2,276/16/5.

Serge, Seamen's (File No. C.4/259/37). John Vickers & Co. Pty. Ltd., £11,945/15/-.

Bedspreads, Barrack, Single (File No. C.4/259/46). L. Hanson Bros., £4,759/4/5.

Sheets, Cotton, Single, Unbleached (File No. C.4/259/55). The Lebel Trading Co. (Aust.) Ltd., £11,162/10/-.

Cloths, Table (File No. C.4/259/56). Myer Emporium (S.A.) Ltd., £291.

Cloths, Table (File No. C.4/259/56). Goode, Durrant & Murray Ltd., £663.

Suits, Pyjamas, Combination, Girls' (File No. C.4/266/159). La-toof & Callil Pty. Ltd., £999.

Trolleys, Accumulator, Electric, Starting (File No. C.4/300/21). Evans Bros., £4,790/18/4.

27-Passenger "Bedford" Bus (File No. C.4/303/77). Freemans Motors Ltd., £2,907/14/-.

"Commer" 32 Passenger Buses (File No. C.4/303/77). Rootes Ltd., £12,174.

Refuse Collector Unit (File No. C.4/303/88). Rootes Ltd., £1,010.

Star Delta Switches, with Thermal Overload and Relay Heaters (File No. C.4/307/177). A. H. Gibson (Electrical) Co. Pty. Ltd., £197/10/-.

Quartz Crystals (File No. C.4/316/111). Amalgamated Wire-less (A'asia.) Ltd., £81.

Quartz Crystals (File No. C.4/316/111). Electronic Industries Ltd., £532/8/6.

Voltmeters (File No. C.4/319/14). Siemens (Aust.) Pty. Ltd., £54/5/-.

Central Tube (File No. C.4/350/35). Ullin Engineering Co. Pty. Ltd., £230/2/-.

Cream Cans and Covers (File No. C.4/360/54). A. Joyce & Co. Pty. Ltd., £300.

Hexagonal Bar (File No. C.4/371/228). Melbourne Iron & Steel Mills Ltd., £420/8/-.

Hand Forgings (File No. C.4/371/240). Australian Forge and Engineering Pty. Ltd., £1,159/10/-.

Brass, Bar (File No. C.4/371/258). Noyes Bros. (Melbourne) Ltd., £737/6/8.

Cabinets, Steel, Filing (File No. C.4/380/15). Duff Steel Systems Co., £4,240.

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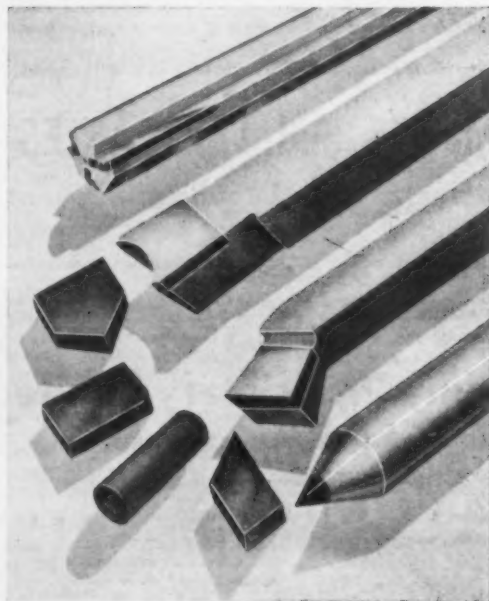
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Collapsible Basket Pallets

(Continued from page 48.)

lets, the operator at the winding machine stacks the spools in the container as before. But now the handler uses a pallet truck to pick up the full container, with ten times as many spools as before, and moves directly on to the scale. By setting the tare to take into account the uniform weight of our pallet trucks, even this simple unloading operation is avoided.

From weighing, the container is trucked a few feet to the end of the building where a power hoist with a specially designed sling lowers it to a standard road-type platform truck below. This truck moves twelve containers at a time out into the street and around the block to the storage building. There, pallet trucks pick up the containers and deliver them to the storage area. A high-lift fork truck, capable of manoeuvring the 40x48-in. containers in an 8-ft. aisle, stacks them five high. Despite the wider aisles, utilization of vertical space has materially reduced the number of square feet required for storage.

As yarn is required, the fork truck can deliver containers directly to the scales for weighing and loading to the operators' racks.

When we wish to take physical inventory, we have only to weigh the partially loaded containers. The mesh construction of the containers makes it possible to see

which ones are fully loaded, and certainly there can be no question of the accuracy of the perpetual inventory on those containers.

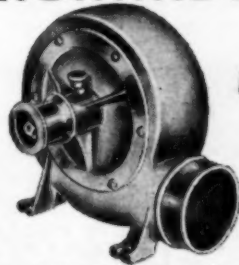
Production of axminster carpeting, particularly, once presented a problem that is now more readily solved. For example: Certain specified quantities of 20 different coloured yarns are required to set up the design on the carpet pattern; it is vitally important that all colours be available as needed. If shortages occur, machines are held up while the missing colours are dyed. If the shortages appear in a widely used ground shade, it is almost impossible to get a satisfactory colour match, and the resulting carpet would be made a "second." No longer must we rely completely on the perpetual inventory cards. Chances are that most or all of the yarns exist in sufficient quantity, so that a visual check of the full container will guarantee clear sailing. In a few cases, some containers may have to be removed from the stack and weighed, but that's a small price to pay for the trouble it avoids.

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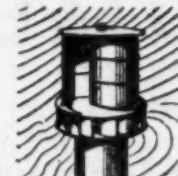
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CURRENT TENDERS

NEW TENDERS

The following tenders have been called since our last issue. Current tenders which have been published in previous issues follow this section.

COMMONWEALTH

POSTMASTER-GENERAL'S DEPARTMENT.

Metalworking, Grinding and Cut-off Wheels (Sch. C.6295). June 6.

Felt Hats and Helmets (Sch. C.6313). May 25.
Portable Water Pump Units (Sch. 6307). May 30.
Sound on Film Projector, 16mm. Arc Type (Sch. C.6301). May 11.

DEPARTMENT OF SUPPLY.

Ammeters and Voltmeters. May 11.
Floor Polishing Machine, Electric. May 11.
Motor Generators (60 K.W.). May 11.
Physics Apparatus. May 11.
Plastic Sheeting. May 11.
Refrigerator Lighter, Purchase of. May 11.

Ribbon, Silk, Medal. May 11.
Transformers and Ammeters. May 12.
Wax Paraffin. May 12.

STORES SUPPLY AND TENDER BOARD.

Desk Calendar Stands and Refills (Sch. C.T.B.877). May 18.
Floor Cloths (Sch. C.T.B.876). May 18.

STATES

NEW SOUTH WALES

GOVERNMENT RAILWAYS DEPARTMENT.

Air and Horn Break Switches, 2 and 3 pole, 11 KV, 300 amp. (Sch. CE-1897). May 10.

Concrete Pump, with 25 h.p., 415 volt, 3 phase electric motor (Sch. CE-1888). June 5.

Disconnecting Switches, single pole, 11 kv, 300 amp. (Sch. CE-1897). May 10.

Dust Collectors (5), for Ultimo Power Station (Spec. 1252). June 21.

Fuse Mounts (11 kv), for Liquid Fuses (Sch. CE-1897). May 10.

Power Press (15 ton), with removable die plates (Sch. CE-1889). June 5.

DEPARTMENT OF MAIN ROADS.

Crankshaft. May 11.
Electric Motor Compressor Set. May 11.

(Turn to page 71.)

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NEW TENDERS - Contd.

FORESTRY COMMISSION.

Copper Tube Fittings. May 9.
Motor Parts. May 9.
Vulcanising Clamps. May 9.

MARITIME SERVICES BOARD.

Marine Boiler, with working pressure of 120 lb. per sq. inch. May 16.
Vertical Tube Submerged Boiler, with working pressure of 90 lb. per sq. inch. May 16.

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STATE CONTRACTS CONTROL BOARD.

Dictating Equipment. May 11.
Electric Motors. May 8.
Glass Annealing Oven. May 8.
Letter Franking Machine. May 11.
Pyrometer. May 8.
Radio Parts, Electrical Meters. May 12.
Scientific Apparatus. May 10.
Tapestry Canvas. May 16.

SYDNEY COUNTY COUNCIL.

Coal Handling Plant, for Bunnerong "B" Power Station (Spec. 1400). Extended to June 15.
Metal Clad Switchgear (\$3,000 volt.), for Homebush Substation (Spec. 1403). Aug. 17.

Moulded Insulation Fuse Handles (1,000). May 8.

Steel Lamp Shades (600), baked enamel, cadmium plated May 11.

Structural Steel for operating platform galleries, Bunnerong "B" Power Station (Spec. 1396). May 18.

Structural Steelwork for Turbo-Alternator Foundations, for Pyrmont "B" Power Station (Spec. 1395). Extended to May 18.

Carrier Telephone Equipment (Sch. 295). June 20.

Radio and Electrical Test Equipment (Sch. 294). June 27.

MELBOURNE AND METROPOLITAN BOARD OF WORKS.

Concrete Production Plant. June 20.

STATE ELECTRICITY COMMISSION.

Fuel Oil Centrifuges (Spec. 49-50/302). Extended to May 17.

Fuel Oil Storage Tanks (Spec. 49-50/279a). May 19.

Horizontal Centrifugal Pumps (Spec. 49-50/321). June 7.

Tubular Steel Scaffolding (Spec. 49-50/312). May 17.

(Turn to page 71.)

VICTORIA

GOVERNMENT RAILWAYS DEPARTMENT.

Guillotine Shearing Machine. May 31.

DEPARTMENT OF PUBLIC WORKS.

Fuel Hot Water Service for Warrnambool. May 9.

Fuel Hot Water System for Geelong. May 9.

Hot Water Service, for Bendigo Country Roads Board. May 9.

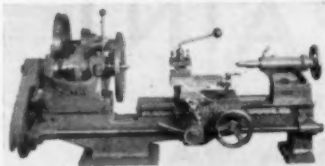
MELBOURNE HARBOUR TRUST.

Fork Lift Truck, 15,000 lb. capacity, 19 ft. mast and 6 ft. forks. Extended to May 12.

DEPARTMENT OF CIVIL AVIATION.

Altimeter Settings Indicators (Sch. 292). June 20.

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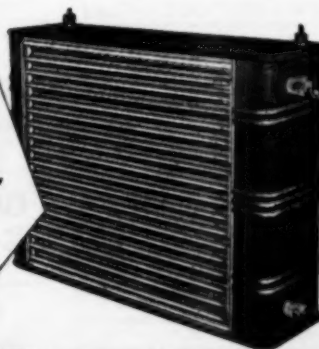
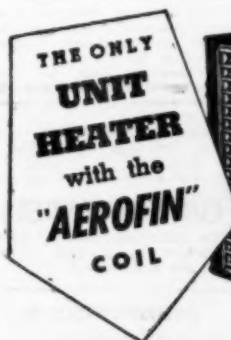


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NEW TENDERS - Contd.

Vulcanised Rubber Insulated Copper Cable (Spec. 49-50/316). May 24.

MISCELLANEOUS.

Tractor, suitable for drawing five gang mowers, for City of Hawthorn. May 10.

WEST AUSTRALIA

GOVERNMENT TENDER BOARD.

Beef Rollers (2,000), for Wyndham. May 18.
Cotton Waste, 160 tons, for Railways. June 15.
Diesel Mechanical Locomotives (18). July 20.
Diesel Electric Main Line Locomotives (48). July 27.
Electric Motors and Switchgear, for State Brick Works. May 18.

Floor Grinding Machine, motor driven, pedestal type. May 11.
Multi Wheel Rollers, rubber tyred. May 18.
Refrigeration Unit for Claremont Mental Hospital. May 18.
Stance Valves, 18, 21, 24, and 30 inch. May 18.
Trommel Screens, Diesel engine driven. Extended to May 11.

CURRENT TENDERS

The following tenders have appeared in previous issues and are still current.

COMMONWEALTH

POSTMASTER-GENERAL'S DEPARTMENT.

Adhesive Insulating Tape (Sch. C.6247). May 7.
Barretters (Sch. C.6293). July 11.

Communication System between Sydney and Melbourne (Spec. C-6157). Oct. 5.
Condensers (Sch. C.6292). July 20.
Electric Soldering Tools (Sch. C.6308). May 25.
Insulated Wire (Sch. C.6263). June 6.
Maintenance Parts, for Long Line Equipment (Sch. C.6282). June 1.
Metal Anchors, Drills, and Clips, for Masonry (Sch. C-6294). May 16.
Motor Generators (Sch. C.6276). June 6.

Post Office Scales and Weights (Sch. C.6284). July 18.
Printed Forms, "Costing" Series (Sch. C.6309). May 9.
Printed Basic Drawing Sheets (Sch. C.6185). May 15.
Spindles, Steel (Sch. C.6286). June 13.
Tents, Flies and Tarpaulins (Sch. C.6215). May 18.
Testing Instruments (Insulating Resistances), (Sch. C.6289). July 13.

Wire, G.I., Steel Stranded (Sch. C.6275). June 1.
Woodworkers' Tools (Sch. C-6251). May 11.

DEPARTMENT OF CIVIL AVIATION.

Automatic Voltage Regulators (Sch. 288). May 9.
Fire Extinguishers (Sch. 290). May 16.
Fire Trailer Units (Sch. 289). May 23.
Mild Steel (Sch. 287). May 30.
Mechanical Side Loading Attachments (Sch. 291). May 9.

DEPARTMENT OF SUPPLY.

Multimeters. May 9.
Vertical Boring and Turning Mill. May 11.

GOVERNMENT RAILWAYS DEPARTMENT.

Diesel Powered Rail Cars (3 ft. 6 in. gauge). June 6.
Dogspikes. May 9.

(Turn to page 74.)

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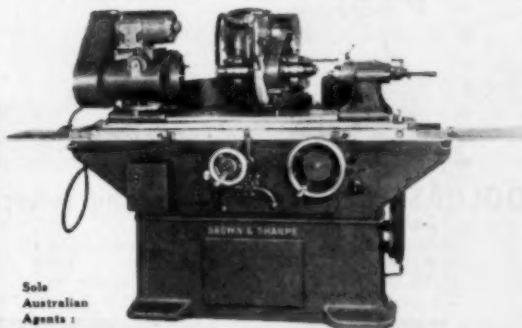
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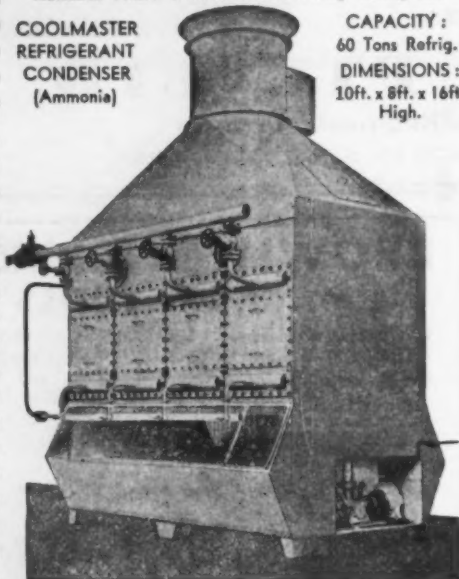
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CURRENT TENDERS—Contd.

Fishbolts. May 9.
Rail Anchors. May 9.
Spring Washers. May 9.

STATES

NEW SOUTH WALES

GOVERNMENT RAILWAYS DEPARTMENT.

Air Operative Multivene Motor
Sump Pumps (Sch. CE-2643). May
10.

Air Driven Winches, single
drum (Sch. CE-2641). May 11.
Carrier Telephone System, 12
channel (Spec. 81). Extended to
May 17.

Drain Cocks (6), for Air Reser-
voirs (Spec. 2114). May 3.

Electric Winch, for 10 ton Back
Leg Crane (Sch. CE-1862). May
17.

Embossing Press (Sch. CE-
1824). May 16.

Frequency Modulated Radio
Apparatus (Spec. 83). May 31.

Platform Trucks, Battery
Operated, 2 ton capacity (Sch.
CE-1838). May 25.

Rectifier Units (4,000 KW) and
Energy Dissipating Resistor Units
(Spec. 1258). July 12.

Transformers (2), 50 KVA. for
Belmore Sub-station (Spec. 1261).
May 10.

Transformers (20), 50 KVA. for
Railway Sub-station (Spec. 1262).
May 10.

Tunnel Diesel Locomotives,
light-weight (Sch. CE-2642). May
18.

DEPARTMENT OF MAIN ROADS.

Membrane Sealing Compounds
(200 gals.), for curing concrete.
June 15.

Trench Roller, Self Propelled.
May 18.

DEPARTMENT OF ROAD TRANSPORT AND TRAMWAYS.

Axles (400) and (73) pairs of
wheels and axles, total weight of
approx. 70 tons. May 15.

Centre Lathes (2). May 8.
Slotting Machine. May 8.
Vertical Milling Machine. May
8.

MARITIME SERVICES BOARD.

Fire Pumping Unit, high pres-
sure. Extended to May 15.

METROPOLITAN WATER, SEWERAGE AND DRAINAGE BOARD.

Air Operated Tunnel Loaders
(5). May 9.

C.I. Flanged Fittings (60 tons).
May 23.

Centrifugal Type Pumping
Units (2), elect. driven, vertical
spindle, for Homebush Sub-
station. Extended to June 6.

Combined Passenger and Goods
Lift, elect. driven and controlled
for Bondi Outfall Treatment
Works. June 6.

Compression Testing Machine
(250 ton). May 16.

Electric Storage Battery Loco-
motives (6). May 9.

Portable Electric Drills (12),
Portable Electric Grinders (6)

(Turn to page 75.)

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CURRENT TENDERS—Contd.

P.E. Senders; (3) P.E. Saws (3); and Portable Pneumatic Grinders (6). May 9.

Pumping Unit, Electrically Driven, Centrifugal Type, for Killara. Extended to June 6.

Pumping Units (2), Electrically Driven, Centrifugal Type, for Coledale. Extended to June 6.
Radial Drilling Machine, Motorised, 60 inch arm, new or s.h. May 10.

STATE CONTRACTS CONTROL BOARD.

Cotton Waste. May 9.
Lubricants and Oils. May 9.

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Marine Engines. May 9.
Scientific Apparatus. May 16.
Tools, for Carpenters and Engineers. May 9.

Tractor, Trailbuilder and Power Control Unit, Purchase of. May 9.

Weighing Machines and Weights. May 9.
Wire, Wire Nails, etc. May 9.

SYDNEY COUNTY COUNCIL.
Air Break Isolating Switches, for Support Insulators (Spec. 1386). June 15.

Bare Copper Cable and Copper Wires (Spec. 1379). Extended to May 11.

Booster Regulators, for Low Voltage Distributors (Spec. 1384). June 8.

Cast Hotplates, for Electric Ranges (Spec. 1390). May 11.
Compensators and Relays, for Voltage Regulating Equipment (Spec. 1407). June 22.

Current Limiting Reactor, oil Immersed, for City Sub-station (Spec. 1348). May 23.

Lightning Arresters, 122,000 volt. (Spec. 1385). May 25.
Metalclad Switchgear, 11,000 volt., 250 M.V.A., for Mascot Sub-station (Spec. 1303). Extended to May 18.

Miscellaneous Piping (Additional), for Pyrmont "B" Power Station (Spec. 1393). May 11.

(Turn to page 76.)

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- Point of transmission, the pointer being rigidly fixed to shaft.
- Solid metal body.
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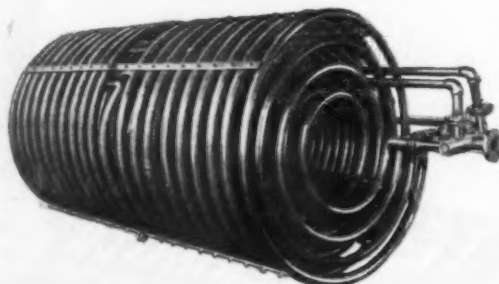
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CURRENT TENDERS—Contd.

Oil Immersed Current Limiting Reactors for City Sub-station (Spec. 1348). May 25.

Power Transformers (13,500 K.V.A.), for Sub-stations (Spec. 1361). June 1.

Power Transformers (13,500 K.V.A.), for Sub-stations (Spec. 1354). Extended to June 8.

Single Conductor, Varnished Cambric Insulated Cable (11,000 volt.). (Spec. 1391). May 25.

Steel Economiser Tubes, solid drawn, for Section "B", Bunnerong Power Station (Spec. 1410). May 25.

Structural Steel Framework, for Coal Handling Plant, Bunnerong "B" Power Station (Spec. 1404). May 11.

Switchgear (440 volt.), for Salt Water Pumps, Bunnerong Power Station (Spec. 1401). May 18.

WATER CONSERVATION AND IRRIGATION COMMISSION.

Disc Harrows, 2 Sets. May 11.

Drill Cultivator. May 11.

Road Grader, Drawn Type. May 11.

Wheeled Tractors (2), Pneumatic Tyred. May 11.

MISCELLANEOUS.

Centrifugal Pumping Units (self-contained), for Snowy Mountains Hydro Electric Authority. May 9.

Concrete Mixer, half bag, machine driven, with rubber tyred wheels, for Shire of Jerilderie. May 10.

Crawler Tractor, approx. 40 h.p., weight 9,800 lb., to be fitted with an Angle Dozer and an Automatic Tractor Wheel Scoop, for Liverpool Plains Shire. May 11.

Diesel Patrol Grader, heavy duty, with Scarifier Equipment, for Yanco Shire Council. May 8.

Diesel Autopatrol Grader, tandem drive, with hydraulically operated controls, 12 ft. blade, Scarifier, etc., for Shire of Stroud. May 22.

Hydraulic Regulating Valves (37), for Central Tablelands County Council. Extended to May 22.

Materials—Cement, Emulsion, Pipes and Road Binders, for Municipality of Randwick. May 16.

Medium Grader (12,000-15,000 lb.), and Heavy Duty Grader, for Copmanhurst Shire Council. May 15.

(Turn to page 77.)

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New Caledonia.

CURRENT TENDERS—Contd.

Motor Patrol Grader, approx. 13,000-15,000 lb., fitted with blade and scarifier, for Shire of Wingecarribee. May 15.

Road Machinery—Crawler Tractor (44 in. tread), approximately 40 horse power, and 9,800 lb. in weight; Tractor to be fitted with an Angledozer. Automatic Tractor Wheel Scoop, 4 ft. 6 in. bowl width, capacity 28 to 36 cubic feet, for Liverpool Plains Shire. May 11.

Scum Separation Equipment, for Wade Shire Council. May 30.

Steel Framed Crab Winches (2-ton capacity), twelve (12); Beam Pumps (6), for Dewatering, 3,000 galls. per hour capacity, for Snowy Mountains Hydro Electric Authority. May 8.

Supervisory Remote Control Equipment, for Newcastle City Council. Extended to May 8.

Tractor Drawn Gang Mower, for Municipality of Randwick. May 16.

Transformers—one 75 KVA 6,000/415/240 volt., and one 200 KVA, 22,000/415/240 volt., for Shire of Wakool. May 15.

Transformers (14), of various sizes, for New England County Council. May 20.

VICTORIA

GOVERNMENT RAILWAYS DEPARTMENT.

Ball Bearings, for 70 ft. Turntables. May 17.

Bedside Tables. May 10.

Common Battery Switchboard, floor type. June 7.

Hacksaw Machine, high speed. May 10.

Letterpress Printing Machine, quad crown, two revolution. May 24.

P.A.B.X. Equipment, Manual Telephone Switchboard Power Plant and Telephones. June 7.

Power Plant and Telephones. June 7.

Switchboards and Telephones. June 7.

Water Cooler. May 10.

CITY OF MELBOURNE.

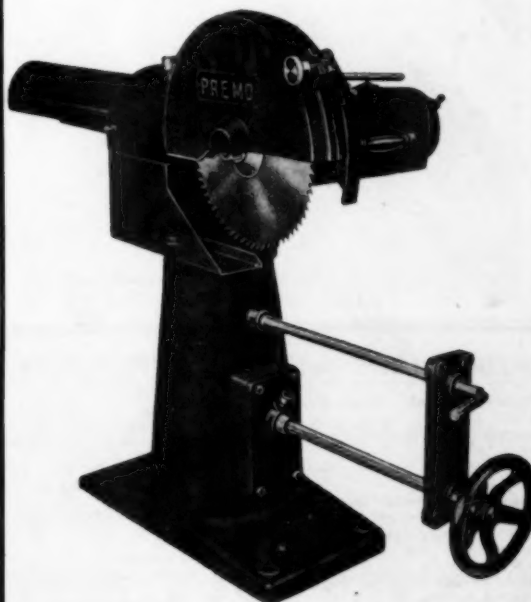
Bolts, Nuts, Coach Screws, etc. (Spec. 709/E). May 8.

(Turn to page 78.)

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CURRENT TENDERS — Contd.

Braided Aerial Cables (Spec. 710/E). May 8.

Castings, non-ferrous, and iron. May 8.

Gas-filled and Vacuum Lamps (Spec. 707/E). May 8.

Insulating Material (Spec. 708/E). May 8.

O.H. Travelling Cranes, electrically operated (2), 10 ton (Spec. 704/E). June 14.

Road Traffic Control Signals. Extended to June 21.

Steel Conduits (Spec. 711/E). May 8.

V.I.R. Cable (Spec. 712/E). May 8.

DEPARTMENT OF PUBLIC WORKS.

Central Heating System, for Melbourne Technical College. May 9.

Refrigerator, kerosene operated, household type, for Underbool. May 9.

Sawdust Extraction Equipment, for Caulfield. May 9.

HARD CHROME PLATING for Building Up

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Candles, Soap, etc. May 9.

Fire Plug Balls. May 9.

Galvanised Sheet, Iron Pipes and Cows. May 9.

India Rubber Goods. May 9.

Irregular Castings. May 9.

Liquid Fuel. May 9.

M.S. "U" Bolts. May 9.

M.S. Elevated Tank (10,000 gall.). May 23.

Plumbers' Sundries. May 9.

Rope, Cordage and Yarns. May 9.

Trailer Shelters (30), 14 ft. x 8 ft. May 9.

Workshop Equipment—Milling Machine, Grinders, Lathe, Electric and Hydraulic Hoists, etc. May 23.

MELBOURNE HARBOUR TRUST.

M.S. Plates (26 tons). May 12.

Mobile Cranes (12), 2-3 ton capacity. May 12.

STATE ELECTRICITY COMMISSION.

Air Operated Tunnel Loaders, 2 of 1 ton and 2 of two ton capacity (Spec. 49-50/292). May 10.

Derrick Cranes, electrically operated, 5 and 10 tons (Spec. 49-50/309). May 10.

Equipment of Centralised Control of Consumer Loading (Spec. 49-50/771). June 21.

Main Distribution Boards (400 V.), and Air Circuit Breakers (Spec. 49-50/296). May 17.

(Turn to page 79.)

FOR ALL CLASSES OF TENSION, TORSION AND COMPRESSION SPRINGS

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CURRENT TENDERS—Contd.

O.H. Travelling Cranes, elec-
trically operated, 5-10 ton (Spec.
49-50/309). May 10.
Submersible motor driven Bore
Hole Centrifugal Pumps (Spec. 49-
50/288). May 10.
Switchgear (220,000 volt.) and
Accessories (Spec. 49-50/251).
Extended to July 26.
Telephone Cable (Spec. 49-
50/291). July 12.

STATE RIVERS AND WATER SUPPLY COMMISSION.

Electric Pumping Units (4),
motor-driven, for Red Cliffs. June
30.

MISCELLANEOUS.

Air Compressors, Motors, and
Ejector Equipment—2 Cyl. 3 in. x
6 in. Air Compressors, V belt driven;
Reconditioned Cylinder Block and
Set of Valves, for these Com-
pressors; K.L. Unloader; 40-h.p.
A.G.E. Electric Motor; 15-h.p.
A.G.E. Electric Motor; 25-h.p. In-
vincible Kerosene Engine; 9 ft. x
3 ft. diam. Air Receivers, with
Wheel Valve; 150 gal. Sewage
Ejectors; a quantity of 3 in. and
4 in. Air Piping, with Valves and
Fittings; Switchboard, Switches,
and Pressure Gauges, for above
Plant. Purchase of, from Swan
Hill Sewerage Authority. May
11.

Steam Roller (10 ton), Purchase
of, from Shire of Kyneton. May
12.

Traffic Lights, for City of Co-
burg. May 8.

Water Filtration and Purifica-
tion Plant:—Flocculating and
Sludge Scraping Mechanisms;
Filter Control Valves; Rate Con-
trollers, Indicators, and Connect-
ing Pipework; C.I. Pipes and Fit-
tings, for Treatment Plant Units;
Chemical Dry Feeders, etc.; Solu-
tion Mixing Equipment, Chlorina-
tor Equipment, etc., for Mildura
Urban Water Trust. July 10.

Water Purification Plant:—
Flocculating and Sludge Scraping
Mechanism; Filter Control
Valves; Filter Rate Controllers,
etc.; Cast Iron Pipes and Fit-
tings; Supply of Chemical Dry
Feeders, for Shepparton Urban
Water Works Trust. June 21.

QUEENSLAND

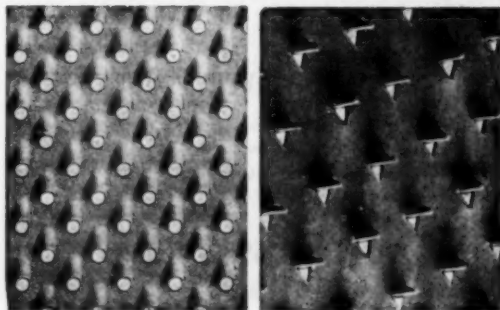
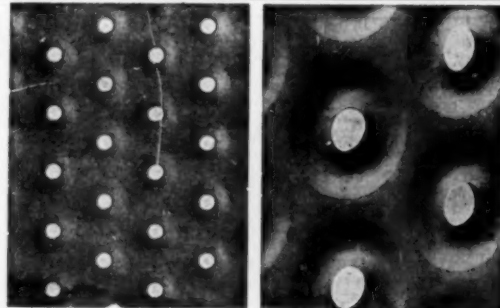
BRISBANE CITY COUNCIL.

Air Break Switches and Isolators.
May 15.
Cable, 33,000 volt., and Pilot
Cable. June 9.
Maximum Demand Indicators.
May 12.
Oil Circuit Breakers, 33 kv, 400
amp., 750 mva. May 19.
Polyphase, A.C., Watt-hour
Meters. May 12.

STATE ELECTRICITY COMMISSION.

Alternator, 6.6 KV, 125 KW
(Spec. 194). July 19.
C.I. Pipes and Specials, C.I.
Twin Strainers and C.I. Gate
Valves for Air and Oil Cooler
Circulating Water (Spec. 212).
June 21.

(Turn to page 80.)



Holes for Washers, Shredders and Graters.

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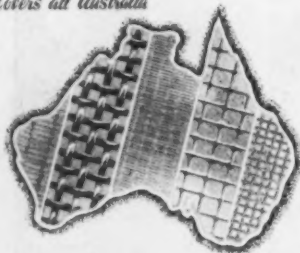
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CURRENT TENDERS — Contd.

Centrifugal Pumps (Spec. 217).
May 24.

Circulating Pump, cooling tower,
motor driven (Spec. 210). May 17.

Coal Handling Plant, for Gas
Producers, for Longreach Shire
Council (Spec. 199). Extended to
May 17.



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(NO. 10) THE BOULEVARD & THE BROADWAY
PUNCHBOWL N.S.W.

Cooling Tower Circulating
Pump, motor driven, complete
(Spec. 210). May 17.

Electric Generating Plant, Oil
Engine Driven (Spec. 181). May
10.

Fire Protection Equipment (Spec.
173). May 24.

Generating Plant, gas-cum, oil
engine driven, for Charlieville
(Spec. 208). June 7.

Oil Engine Driven Elect. Gener-
ating Plant (Spec. 181). May 10.

Power House Switchgear, low
tension (Spec. 203). June 21.

Steam and Water Valves, high
and low pressure (Spec. 193). May
24.

Steam Turbo Alternators (Spec.
200). Aug. 30.

Steam Turbo Alternator (Spec.
196). Aug. 16.

Water Tube Boilers (Spec. 200).
Aug. 30.

Wood-burning Gas Producer
Plants (Spec. 192). May 31.

GOVERNMENT RAILWAYS DEPARTMENT.

Diesel Electric Locomotives (18).
June 30.

MISCELLANEOUS.

Distribution Transformers, 3-
phase. Extended to May 29.

Equipment—Electric Generating
Set, portable; Earth Boring Ma-
chine; Portable Power Driven
Saw, for Townsville Regional
Electricity Board. June 5.

Mild Steel Plate, 1,500 tons, for
Townsville City Council. May 18.

Pumps and Motors and Water
Level Indicator, for Chinchilla
Shire Council. May 8.

Channel Carrier Telephone
Equipment (3), and Associated
Apparatus. May 11.

Mild Steel Plate, 1, 2/16 and
9/16 inch. May 25.

Pumps—G.W.S. Norseman, Ex-
tension. May 25.

Travelling Crane (40 ton), for
Railways. May 18.

Wheels and Axles (6,000 pairs),
for Railways. Extended to May
15.

SOUTH AUSTRALIA

SUPPLY AND TENDER

BOARD.

Carrier	Telephone	System.
June 19.		
Carrier	Telephone	System.
May 15.		
Marine Diesel Engine, 30 h.p.		
May 22.		

WEST AUSTRALIA

GOVERNMENT TENDER

BOARD.

Floating Dredge Plant. Ex-
tended to May 11.

NEW ZEALAND

HYDRO ELECTRIC DEPART- MENT.

Electric O.H. Travelling Cranes
(2), 4 motor, 80 ton. May 30.

O.H. Travelling Crane (25 ton),
Electric. May 9.

Outdoor Switchgear, 110 k.v.
June 6.

Switchgear, 100 k.v. May 16.

Transformer Banks, 27,777 k.v.a.
(4), and spare unit. June 13.

(Turn to page 81.)

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RUST-RESISTING COATINGS
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LTD.

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DEPARTMENT OF RAILWAYS— NEW SOUTH WALES.

TENDERS enclosed in sealed envelopes which must be endorsed "TENDER FOR . . .", addressed to the Commissioner for Railways, 19 York Street, Sydney, will be received on the dates and times shown for services specified. Tenders may be lodged in the Tender Box, Room 504A, 8th Floor, Railway House, 19 York Street, Sydney, or posted to the above address.

Wednesday, 31st May—
12 noon.

For the manufacture, supply and delivery of twelve (12) four wheel, steel underframe powder vans, in accordance with Specification No. 2203. Copies of Specification and Drawings obtainable at standard prices, from Chief Mechanical Engineer, Room 202, Railway House, 19 York Street, Sydney. Telephone enquiries, M 4401, Ext. X 889.

For the supply and delivery at Signalling Workshops Store, N.S.W. Department, Liverpool Road, Chullora, of one carrier telephone system, as covered by Departmental Specification No. 84. Copies of Specification (2/6 per copy) and further particulars obtainable from Signal and Telegraph Engineer, Room 806, 19 York Street, Sydney.

Wednesday, 21st June—
12 noon.

For the manufacture, supply, delivery and erection of five (5) dust collectors for Ultimo Power Station, to Specification No. 1252. Tender forms (Specifications, price 5/- each) and further particulars obtainable from Chief Electrical Engineer, 19 York Street, Sydney.

No tenders necessarily accepted. Make cheques payable to Commissioner for Railways. Any tender unaccompanied by deposit as provided in conditions of contract may be rejected.

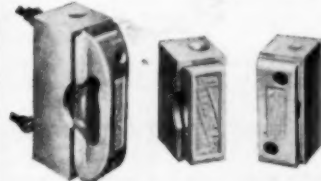
S. R. NICHOLAS,
Secretary for Railways.

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NEW SOUTH WALES

MISCELLANEOUS.

Austrian Chairs (159), second-hand, Purchase of from Municipality of Ashfield. May 10.



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Tasmania —R. H. Littler, Launceston.
New Zealand —Carrol & Carrol, Auckland.

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POSTMASTER-GENERAL'S
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Work Benches for Technicians
(Sch. V.339). May 9.

QUEENSLAND

STATE STORES BOARD.
Galvanised Iron. May 22.
Reinforcing Steel. May 11.

Auto Patrol Grader, approx. 40
h.p., fitted with Scarifier Equip-
ment, for Shire of Gunning. May
12.

Power Road Roller, 2-3 ton, for
Atherton Shire Council. May 13.

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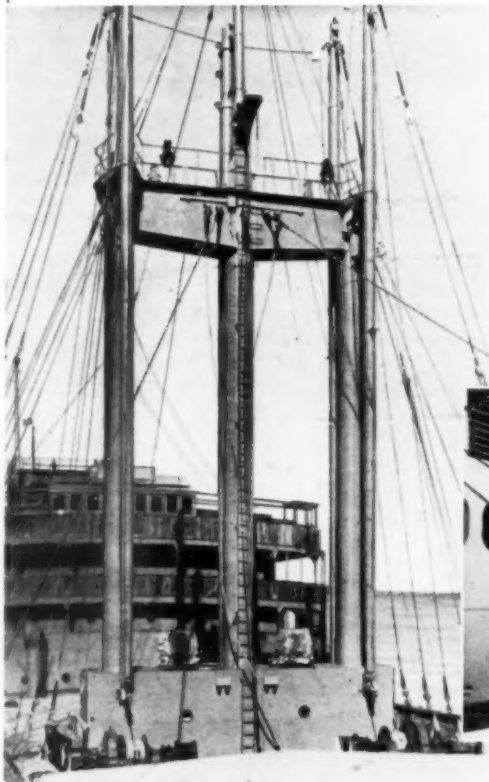
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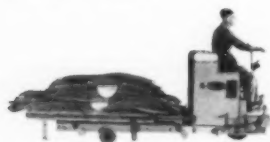
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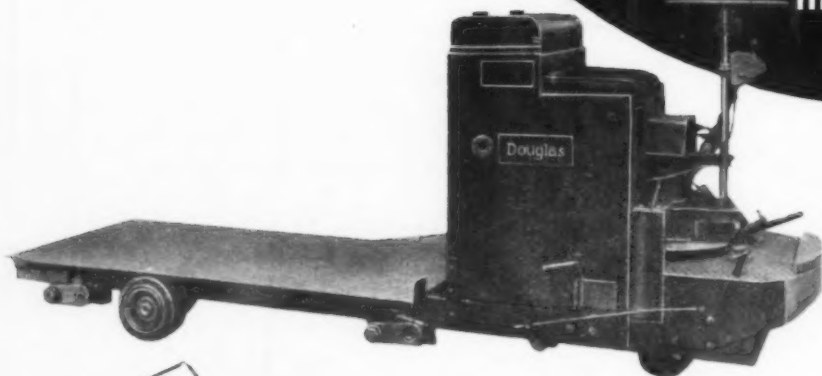


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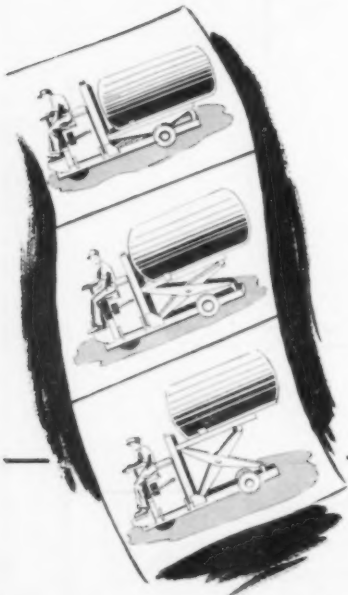
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the costliest form of
movement!



With a Douglas Truck and Stillage one man can lift and move loads up to 25 cwt. in a matter of seconds. No need to handle the goods . . . just back the truck under the stillage, operate the power lift, and away! The Douglas High-lift model, besides picking up the load, will also lift it to any height between 1' 7" and 4' 8". Transhipment to motor vehicle, railway truck or loading dock is thus effected more speedily and easily.

Douglas Trucks and Stillages are adaptable for practically all types of products and materials. The twin-cylinder Douglas air-cooled engine is easy starting and smooth running. Petrol consumption is about 1½ gal. per 8-hour working day. Steering is so flexible that a Douglas can be manoeuvred readily and quickly through the narrowest spaces and gangways. Reversing is simple . . . rotate the steering wheel 180°.

Manhandling costs TOO much . . . in time, effort, efficiency and money. Let us arrange a test to show how much Douglas Trucks and Stillages can save you.



These illustrations show how a Douglas High-lift truck will raise your load to any required height between 1' 7" and 4' 8".

Douglas

POWER TRUCKS

FOR QUICKER, CHEAPER, SMOOTHER MOVEMENT
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